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LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interests of Lake Carriers, and improve the character of the service rendered to the public.

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THE ERIE CANAL AND NEW YORK TRADE.

From the opening of the Erie canal in the year 1826 until about the year 1861 the water route formed by the Great Lakes, the Erie Canal and the Hudson River constituted almost the sole avenue of commerce for the transportation of the surplus products of the West to the seaboard. It was not until about the year 1860 that the transportation of wheat and corn began from Chicago to the seaboard by all-rail lines, and by lake to Erie, Pa., or Buffalo, N. Y., and thence by railroad to the several Atlantic seaports, viz: Boston, New York, Philadelphia and Baltimore. This movement did not assume very considerable proportions, however, until about the year 1873. Since that time there has been a very large diversion of the products of the West from New York city to the several Atlantic seaports, as the result of improved facilities for the transportation of agricultural products by rail, the steady reduction in the cost of railroad transportation and the consequent sharp competition between rival lines and rival ports. There has also been a considerable diversion of late years, to Norfolk and Newport News.

Value of exports of domestic merchandise from the port of New York and from competing Atlantic seaports during the years ended June 30, 1882 and 1897.

Ports	Year ending June 30. 1882	1897
New York	$332,102,136	$382,610,975
Boston	$61,614,526	$99,451,605
Philadelphia	37,957,661	46,993,614
Baltimore	39,412,642	85,670,912
Norfolk	17,720,532	15,581,532
Newport News	.....	21,773,835
Ports other than New York	$156,705,361	$269,471,498

It appears from this table complied from the official statistics of the National Government that the total value of exports of domestic merchandise from the port of New York exhibited an increase of $50,508,739 from 1882 to 1897, and that the total value of exports of domestic merchandise from competing Atlantic seaports exhibited an increase of $112,760,137 during the same period.

Attention is next invited to the statistics of imports of merchandise, as exhibited in the following table:

Value of imports of merchandise at New York and at competing Atlantic seaports during the years ended June 30, 1882 and 1897—

Ports	Year ended June 30. 1882	1897
New York	$493,060,891	$380,603,580
Boston	$69,594,057	$90,178,419
Philadelphia	34,136,579	48,072,672
Baltimore	14,938,258	11,371,193
Norfolk	369,096	121,858
Newport News	61,683	1,169,315
Ports other than New York	$119,099,673	$150,913,457

Comparing the data for the years 1882 and 1897, it appears that there was an actual falling off in the value of imports at New York amounting to $12,457,311, and an increase in the value of imports at competing Alantic seaports amounting to $31,813,784.

The diversion of commerce from the port of New York is also indicated by the statistics of tonnage entered from foreign ports. This is exhibited in the following table;

Tonnage entered from foreign countries at the port of New York and at competing Atlantic seaports during the years ended June 30, 1882 and 1897—

Ports	Year ended June 30. 1882 Tons	1897 Tons
New York	7,360,843	7,267,475
Boston	1,416,231	1,943,582
Philadelphia	1,055,961	1,539,401
Baltimore	852,575	1,253,072
Norfolk	51,728	237,109
Newport News	.....	331,630
Ports other than New York	3,376,495	5,304,794

Comparing the data for the years 1882 and 1897, it appears that there was a falling off in the tonnage, entered at the port of New York of 93,368 tons, and an increase at the competing Atlantic seaports of 1,928,299.

The differentials agreed upon among the railroad companies as to rates between Chicago and the several Atlantic seaports have operated to the disadvantage of New York. The rates on December 8, 1897, were, on grain and flour (in cents per 100 pounds) as follows:

To New York.....20c. To Norfolk.....17c.
To Philadelphia.....18c. To Newport News.....17c.
To Baltimore.....17c.

No other facts are needed beyond the data already presented from the reports of the New York Produce Exchange and of the United States Government in order to prove that there has been, and is now going on, a large and increasing diversion of commerce from the port of New York to competing Atlantic seaports.

RAPID DRILLING.

In the inaugural address of President Webb, of the Manchester (England) Association of Engineers the following statements occur:

A firm of shipbuilders on the Clyde with "Mushet" steel drills, running at 300 revolutions, drill two holes per minute, 13-16 inch diameter, through steel plates 1⅛ inch thick, the drillings coming through so hot that strong paper is burnt when held underneath. They grind the drills three times in twelve hours. A firm at Bolton turn iron shafting 25.5 feet per minute, turning a shaft 3.25 inches diameter, 22 feet long, in one hour, turning a 32-foot rope pulley for forty ropes, 1½ inch diameter, in five days and five nights. A Glasgow firm finished a shaft 19 feet long, 15¾ inches diameter, one coupling, 31 inches by 3¼ inches, from the rough forging in thirty hours. They also bored a 90-inch cylinder at the rate of 2⅛ inches per hour straight through without stopping, the cutters being sharp at the finish. A 96-inch cylinder, at the rate of 3 1-6 inches per hour, feed six cuts to the inch.

COMMERCIAL DIRECTORY FOR USE IN FOREIGN COUNTRIES.

A United States commercial directory for use in foreign countries is being printed in English, German, French and Spanish by the Journal of Commerce Co., Providence, R. I. This directory will contain a complete list of names and addresses of American manufacturers producing goods of all kinds that are in demand in the various countries of the globe and will be on file at all of the U. S. Consulates, Chambers of Commerce, etc.

While nearly all the countries of the globe are producers of certain lines of goods that are sought for by the inhabitants of other lands, no section of any continent produces a greater variety of machinery than the United States of America, and the surplus of these products is generally far greater than that of any other country, thereby enabling our exporters to supply a great foreign demand in almost any line.

The difficulty heretofore in bringing together the American producer and foreign buyer has been that there was no medium that contained in one volume, printed in different languages, the names and addresses of the United States manufacturers and exporters, with descriptions of the various products that are wanted in all parts of the world. This condition was a great inconvenience to the would-be foreign buyer, who found it many times very difficult to obtain any information relative to a given article produced in America, and to locate the manufacturer in the United States, so that correspondence might be opened.

Among the great variety of American products suitable for and in demand for export, are machinery and tools of every kind, steam engines, locomotives, marine engines, stationary and marine boilers, wood-working machinery, electrical machinery, pumps, fire engines, steamships, steel armor plates, light and heavy ordnance, ship windlasses, steel rails, wire, valves, hydrants, turbine water wheels, exhaust fans, ventilators, etc. The publishers of this invaluable work certainly deserve much credit for their enterprise in making so pronounced a departure and they are entitled to every success.

THE CHICAGO NAUTICAL SCHOOL PRIZES.

The following are the names of the successful candidates in the examination for the Great Lakes Register prizes, held at the Chicago Nautical School on March 26, 1898. Capt. F. D. Herriman finished the papers and handed in the names of the prize winners. He was very much pleased with the examination papers. 37 questions covering the first course were given. The names and prizes won are as follows:

Captain Donald MacLean, $50.00, first prize for captains; Captain Geo. Hammer, $25.00; Captain K. A. Jensen, $25.00. Captain Wm. Brown, $25.00.

Wheelsman Edward Boyne, $50.00, first prize for mates and wheelsmen; Mate Albert Swansen, $25.00; Wheelsman Phil. Sheurmann, $25.00; Wheelsman C. A. Shephard, $25.00;

The school proved very successful this winter having a class of 22. It is believed a larger number will take the course next winter.

THE sum of $3,000 has been appropriated by the present Congress for the erection of a small brick and stone building on the government reservation at Sault Ste. Marie, Mich., for the use of the Weather Bureau.

NEWS AROUND THE LAKES.

BUFFALO.

Special Correspondence to the Marine Record.

More than the usual season's work has been put on the several fleets sailing out of this port and large repairs are still being carried on.

When the balance of the Chicago fleet reach here they will find no up charters for coal. Only 40 cents is offered on Escanaba ore charters.

The Northern Line boats are being got ready for work as rapidly as possible considering the amount of new work and alterations which they are getting this spring.

The steamer Yale has the distinction of being the first of the Chicago grain fleet to reach this port for the season of 1898. She is owned by R. R. Rhodes, of Cleveland.

The steamer M. B. Grover has been given quite entensive repairs this winter. She has had new main deck and deck beams, hatch coamings, main sail, etc., and is now in first-class condition for a brisk summer's work.

Charterers are having no trouble in getting Duluth and Ashland tonnage at 60 cents, and the Marquette rate has been settled at 55 cents. Escanaba 50 cents, but a strong effort is being made to pound it down to 45 cents, by assuring a return coal cargo at going rates.

Vessel insurance on hulls has not yet been fixed here although the new insurance register is out. April 15, when the policies must be renewed, will no doubt see a change and the agents will then have business secured for the season. Three per cent. it is said will be the premium on steel hulls.

Very little vessel insurance has been written yet, although nearly all the agents have decided to hold off no longer for a settlement of rates. Vesselmen are getting somewhat importunate, although the large proportion of the policies run until April 15th. That explains why so many boats are moving. The policies will be renewed before they expire.

Hingston & Son have launched the barge R. A. Burton, built for the Point Abino Sand Co., and are now giving her the finishing touches. She is 135 feet in length and 30 feet beam; has twin screws, a sand pump forward, and has a capacity of 400 yards of gravel. Her cost was $15,000. The steam fittings are now being placed, and she will be ready for service next week.

Masters and engineers of Hand & Johnson's tug line have been appointed, and the list was given out yesterday, as follows: Cascade, master, P. Linn; engineer, T. Reilly. R. H. Hebard, master, A. Walter; engineer, J. Reilly. T. Lavis, master, J. Gray; engineer, H. Boullard. Conneaut, master, J. Lawson; engineer, C. Schriver. James Byers, master, J. Hazen; engineer, J. Freitas. G. Danforth, master, J. Whalen; engineer, J. Byers. W. I. Babcock, master, J. Doyle; engineer, M. M. Upper.

As announced in the Courier this week, W. H. Johnson has been appointed agent of the Erie & Western Transportation Co., (Anchor Line) at this port. By this appointment E. T. Evans, the western manager, does not sever his connection as manager. It was owing to the tax upon his time in that position, that he decided to relinquish the additional duties of agent. J. C. and E. T. Evans, father and son, have had charge of the Anchor Line in Buffalo since its organization in the 60's. Previous to that time they owned and operated the boats that ultimately became the nucleus of the fleet now controled by the Erie & Western. Their boats were sold first to the Central Pennsylvania Railroad, previous to the consolidation of rail lines. They will have a stockholder's interest. The age of Mr. Evans, Sr., who is over 80, and his consequent inability to assist in the work, is a contributory cause for the resignation, and the appointment of Mr. Johnston. It was for the elder Mr. Evans, who at the time was a member of the firm of Gillson & Evans, that David Bell built the steamer Merchant, the first iron boat floated on the lakes.

William J. Connors, who has the contract with the Lake Carriers' Association for discharging grain cargoes this season, will pay his men $1.85 a thousand for shoveling all the grain handled, and he will use the steam shovels of the elevators in every instance. This satisfactory condition has been brought about by a compromise, in which concessions were made by the Lake Carriers' Association, the elevator owners and the contractor. Mr. Connors' bid was $2.95 for each thousand bushels. He announced flatly that he would pay $1.85 of this to the men. This left $1.00 for the steam shovels and ten cents profit for himself. The elevators refused to reduce their steam shovel charges to $1.00 and the matter was held in abeyance until those interested got together. The Lake Carriers' Association then raised the price to be paid to Mr. Conners from $2.95 to $3.10. The elevator owners reduced the price of their steam shovels from $1.35 to $1.20, and Mr. Connors reduced his profit from 10 cents a thousand to 5 cents a thousand. The contractor's bid last year was $3.35, 25 cents more than the new rate made by agreement between Mr. Connors and the Lake Carriers. The first boat of the season to be unloaded at the new rate was the James B. Colgate, with 100,000 bushels of wheat, at the Northern elevator. This elevator, with the others which consented to the use of their steam shovels at $1.00, will be paid $1.20 for their steam shovels. The $1.20 rate went into effect in discharging the Colgate.

Mr. William Thurstone, of Buffalo, N. Y., died on Saturday, March 26, 1898, at his residence, 310 Pennsylvania street, aged 71 years. "His end was as quiet and peaceful as had been his long and useful life." Besides being the regular correspondent for the Black Diamond for upwards of thirteen years, writing under the nom de plume of "Old Statistics," he was secretary of the Board of Trade for thirty-five years, and acted in a similar capacity for the Merchants' Exchange for sixteen years, both of which honorable positions be held at the time of his demise. Mr. Thurstone came to Buffalo, from England, nearly fifty years ago, and commenced work as a printer in the directory department of the Buffalo Courier. He worked as a compositor on the Commercial and Express and later returned to the composing rooms of the Courier. Mr. Thurstone had marked literary ability, and it was not long before his employers noticed it. He became familiar with every branch of commerce and showed such an ability in this direction that he was made editor of the Commercial Courier. He held that position for twenty-two years and when the Board of Trade organized he was appointed secretary. He held his position as commercial editor for many years after his appointment as the board's secretary. When the Merchants' Exchange was organized sixteen years ago he was elected secretary of that association. The MARINE RECORD was indebted to Mr. Thurstone for many favors and like many others is sorry to lose so highly estimable a friend.

PORT HURON.

Special Correspondence to The Marine Record.

Engineer Walter Thorne has left for Buffalo, N. Y., to fit out the steamer America.

Capt. M. P. Parsons left this week for Chicago to fit out his boat, the W. H. Gratwick.

The steam yacht Florence B. will again perform mail service at Detroit on a bid of $12 per diem.

Capt. Thomas Currie has a gang of men at work fitting out the steam-barge New York and two tow barges.

During the season of navigation wind signals will be displayed at the custom house, Miller's coal dock and at the Kendall Marine Reporting Co.'s office.

Capt. Geo. A. McLeod left on Saturday for Manitowoc to take charge of his steamer, Black Rock, and Capt. Chris. Smith left on Friday for Chicago to fit out the steamer L. R. Doty for the season.

On Wednesday Lincoln Boynton purchased of D. N. Runnels, H. W. Maines and the George Lee estate the tug Lee for $7,000. The handsome little tug will be added to the Thompson & Boynton fleet.

The Hall dredges and tugs are being fitted out for immediate use. Dredging will commence in St. Clair river opposite this city some time next week and continue as long as the appropriation holds out.

Capt. W. E. Rice wants it understood that the Lumber Carriers' Association has nothing at all to do with the Lake Carriers' Association. He says that the latter is composed of millionaires, while the former is made up of comparatively poor men with small boats.

The Donnelly Wrecking Co., of Kingston, has purchased the sidewheel steamer Cambria, which ran ashore above Point Edward last summer. She will be taken to Kingston and put on the government dry dock there. The Cambria was formerly worth $10,000.

Charles K. Wells is quoted in the Times as follows: "Over 30 years ago I sailed on the Evelyn Bates and made the trip from Chicago to Liverpool, and the West Indies, back to New Orleans and to Cuba. I shall never forget my experience with the Spanish officials at Matanzas. We found it necessary to unload at that port and were charged over $800 by the Spanish authorities for the privilege of doing so. These officers were regular pirates in those days and I do not think they have improved much since then. If a vessel's cargo overran 100 pounds the boat was fined $250, the claim being made that it was the intention to smuggle goods into the country. If the cargo fell short of 100 pounds we were fined $250, the Spanish maintaining that we had landed the goods at some other port.

The Thompson line steamer Pilgrim, while coming down from Alpena late last fall, discovered the schooner Laura Miller, loaded with lumber, water-logged and abandoned. The Pilgrim got a line aboard the schooner and towed her into Sand Beach. The owners of the Pilgrim some time afterwards libeled the schooner and cargo for salvage. The Laura Miller, before being abandoned, was valued at about $500, and the cargo was valued at about as much more, but when the United States marshal offered the craft and cargo for sale all he could get was $250. The marshal incurred nearly $100 expense in taking care of the vessel. After all fees and expenses in the case are paid the owner of the vessel and the cargo, and the owners of the Pilgrim and her captain and crew will have about $125 to divide among them.

CLEVELAND.

Special Correspondence to the Marine Record.

The whaleback J. B. Trevor is in the Cleveland dry dock for repairs to bottom damage.

Mr. A. A. Parker, of the firm of Parker & Millen, Detroit, visited this port on Tuesday on vessel business.

Mr. C. B. Calder, superintendent of the Detroit Dry Dock Engine Works, came down on the Wilson Transit Liner, Wallula on Tuesday.

Invitations have been sent out to attend the launch of the D. Z. Norton, Saturday afternoon, 2:30 p. m., from the yards of the Globe Iron Works Co.

One of the older school of lake masters and pilots is Capt. Richard Barrow residing on the West-side, still hale and hearty and good for many years yet.

Mr. E. Platt Stratton, chief engineer surveyor for the American Shipmasters' Association, is in the city this week in the interests of the well-known ship classification society, the "Record of American and Foreign Shipping."

A small block of ore to run through the season, from Escanaba, was covered on Saturday at 45 cents, with an up cargo of coal at 25 cents, making a 70 cent freight for the round trip. More figuring along the same line is being done.

At the Shipowners' dry dock the steamer L. C. Waldo is in for some repairs to rudder and calking butts. The Marquette has been overhauled and given some new deck frames and deck planking, while much the same work has just been completed on the schooner Mabel Wilson.

The Cleveland Ship Building Co. will launch a large steel steamer from their Lorain shipyard on Wednesday afternoon, 2 p. m. It is expected that a large number of people will be in attendance, and Lorain will do herself proud on this occasion, as it is the first steel steamer to be launched at that port.

The Brown Hoisting & Conveying Machine Co. has received the contracts from the Government for the building of eight coal loading machines for four coaling stations on the Gulf of Mexico. The amount to be paid for this work is $151,000. The foundry of Taplin, Rice & Co., of Akron, O., is busy on castings for this contract.

The passenger steamer City of Buffalo leaves this port Tuesdays, Thursdays and Saturdays at 7 P. M., central standard time, and leaves Buffalo alternate days, at 8:30 P. M., eastern standard time. Commencing Monday, May 2, daily trips are to be made, Sundays excepted, until May 29, when Sunday sailings will begin from each end of the route.

The large steel tow-barge building at the yard of the Globe Iron Works Co., for Capt. Thomas Wilson and others, which will be launched next Saturday, at 2:30 p.m., standard time, will be named after D. Z. Norton, of the firm of Oglebay, Norton & Co., leading ore shippers. Miss Norton, daughter of the gentleman after whom the vessel is to be named, will christen her.

The ore dock managers have decided to make the same charge to vessel owners, and pay the same wages to their men, as last year. The vesselmen had asked for a reduction in charges, on account of low freight rates. It was determined that any reduction in wages would result in labor trouble or dissatisfaction. Vesselmen will pay 14 cents for unloading, of which 10 cents goes to labor.

The steel steamer W. D. Rees, of the Wilson Transit Line, will clear from Duluth for Buffalo just as soon as she can get in the harbor at Washburn, where she is to take a cargo of oats. The season last year was eight months long for the Rees. She cleared from Duluth April 17, and finished discharging her last cargo for the season at Duluth, Dec. 17. The Rees is owned in one of the best managed fleets on the lakes.

The following appointments of masters and engineers for the season have been made by C. R. Jones: Steamers—Argo, master, George L. Cottrell; engineer, John Golden. Aragon, master, W. E. Chateau; engineer, Warren Tilton. Rhoda Emily, master, J. Albano; engineer, Ambrose Smith. Preston, master, W. J. Harlow; engineer, M. McNamara. Desmond, master, L. F. Hunt; engineer, George Hendry. Argonaut, master, J. H. Warwick. M. C. Neff, master, C. M. Ennes; engineer, J. Carr. Schooners—Charles Wall, master, A. Carter. John O'Neil, master, A. Gustafson. Hattie, master, Joe Mason. Canton, master, H. Jeffrey. J. T. Mott, master, Harry May. John Magee, master, M. Anderson.

The H. D. Goulder, the new steel tug built by the Bell Engine Works, of Buffalo, for the Cleveland Tug Co., is expected to arrive here within two or three days. The Goulder is considered one of the most powerful tugs at present afloat on the lakes. She is 90 feet long, 23 feet beam and 14 feet molded depth. She is equipped with fore and aft compound engines, cylinders 20 and 40 inches in diameter and 30-inch stroke. She has a marine double furnace boiler 12 feet diameter and 16 feet long, carrying 150 pounds of steam. The boiler weighs 43 tons without water. The tug swings a 9-foot 4-inch wheel. She is equipped with a Queen City steam steerer and all modern appliances, including a Snow independent jet condenser. Her cost was $25,000.

Capt. C. E. Benham has appointed Capt. McLeod master of the steamer H. B. Tuttle. After placing the Tuttle in winter quarters last season, Capt. McLeod went to the coast for winter employment, trading a portion of the time to Havana, and the remainder of the time in the tug business out of Galveston, Texas, a few weeks ago he returned to Duluth, and was employed by the Inman tug line until receiving the offer to take over his old command again. Capt. McLeod is a skilled, energetic young man, and no doubt has a bright, successful future in his chosen calling. Capt. Benham has made several very promising masters, but none more technically qualified and attentive to his owner's best interests than Capt. McLeod has shown himself to be.

CHICAGO.

Special Correspondence to the Marine Record.

The tug E. E. Rice is in the Independent Tug Lines' floating dry dock for repairs.

Capt. John Prindville chartered the steamer E. M. Peck for wheat to Buffalo at 1⅝ cents to load on or before April 15.

The tug S. M. Fisher left South Chicago Tuesday, with a tow of car barges for Peshtigo, where a large number of cars, containing ties, posts and poles are awaiting her at the company's dock for shipment.

Capacity for about 1,350,000 bushels of Leiter's wheat was placed on Saturday at an average rate of 1½ cents to Buffalo. Several of the grain fleet now on their way to Buffalo were chartered for their next trip east.

At the Masters and Pilots, Chicago Lodge 33,last meeting, the following new members were initiated: Captains, F. B. Higgie, John F. Hodel and P. J. Cullman. The meeting adjourned to the second Thursday in December next.

Capt. Julius Baker has purchased the interest of Rudolph Perlick in the schooner York State, of which he is now the sole owner as well as master. Capt. Julius is widely known and all his friends wish him much success with his schooner.

Chas P. Willard & Co., N. Canal street, have just issued a catalogue showing all sorts of fancy tonnage for sale, also a large variety of marine machinery and other equipment. The above named firm are known as the Chicago Steam Yacht and Launch Agency.

Captain Fred. Johnson,formerly master of the tug Crosby, has been appointed master of the Lake Michigan Car Ferry Trans. Co.'s large steel tug S. M. Fisher. He is a worthy and energetic young man, and his many friends wish him success in his new department.

The steamers Niagara and Beilman were the first of the grain fleet to leave here on April 1st. The steamers Yale and Waldo took their departure during the afternoon. Several left on Saturday and Sunday and many others, ready to go on Monday and Tuesday, remained in port in consequence of the heavy norther blowing up Lake Michigan.

The Independent Tug Line towed the barge Plymouth to the Santa Fe elevator, the barge Yukon to Armour's A and B elevators, the steamer Panther to the Santa Fe elevator, steamer H. S. Richards to the Indiana elevator, steamer Fred. Mercur to Armour's C elevator, steamer Arizona to the Wabash elevator, steamer W. B. Morley to the Atlantic and Minnesota elevators, steamer D. P. Rhodes to Armour's C elevator.

Another meeting of the Chicago Lumber Carrier's Association was held last Friday afternoon at the Le Grand hotel hall. Considerable more tonnage was added to the association and from the present outlook success seems sure to come. Mr. Carpenter, secretary of the Detroit Lumber Carriers' Association, was present and addressed the meeting and was very enthusiastic abont the success of his association, and stated that the owners of over 70,000 tons of vessel property had joined that association up to date. Another meeting will be held at the same place on Friday afternoon, April 8th.

The Conners Trans. Co., of Chicago, have chartered the iron-side wheel steamer State of Ohio from the Cleveland and Buffalo Transit Co. She will run between Chicago and St. Joseph and Benton Harbor during the coming season. The State of Ohio is of 1,222 gross tons, is classed A 1 and was built at Wyandotte in 1880. She will make an excellent boat for the route. Considerable money has been laid out on her during the past winter. She was to have been put on the Buffalo route until the new steamer City of Erie came out. Her place will be filled by the City of the Straits. She is to arrive here early in May.

At Miller Brothers' shipyard the steamer H.L.Worthington is in dock receiving a new piece of keel aft, some new bottom plant and calking. The schooner Winnie Wing is in having a leak in her center board box stopped, repairs to pocket piece and calking. The schooner Apprentice Boy was in for calking, the tug Dennis Brothers for repairs to sea cock, calking and ironing, the schooner T. J. Bronson for calking all over. The schooner Butcher Boy received new main mast,top mast cross trees and tresle trees; the schooner J. V. Jones was in dock for a calking and is at the derrick receiving new mainmast; the schooner Wilbur had her three masts taken out for reducing and will go in dock for calking.

The U. S. steamer Calumet is awaiting orders to start for the coast to join Uncle Sam's navy. She is manned by the following officers and crew: First Lieut., W. H. Cushing, commanding officer; 2nd Lieut. S. M. Landrey; 3d Lieut. W. G. Blasdel; First Assist. Engineer, A. J. Howison, in charge of engines; 2nd Asst. Engineer, Urban Harvey; Pilot, Chas. T. Bronson, who will leave her at Cleveland, O.; Boatswain, Hans Hansen; Seamen, E. A. Hansen, Jacob Johnson, Cris. Knudson, Albert Lunde; Firemen, Eward Cane,Fred. Heidemann; Coal Passers,Peter Wright, Andrew Oleson; Steward, Henry Beck; Boy, Elmer Ness. The Calumet has done excellent service since her advent at this port and Commander Cushing and Engineer Howison leave behind them many friends and well wishers, who all hope that in the dangers they may have to encounter they will pull safely through and return to their homes again ere long.

DETROIT.

Special Correspondence to The Marine Record.

The new steel steamer America was launched at the Wyandotte shipyards on Saturday afternoon. The new steamer is 165 feet long over all, 30 feet beam, and has a depth of 13 feet. She will be put on the passenger route between Chicago and Marine City.

Capt. Geo. Blanchard, who for many years has been connected with the Star line of steamers, was stricken with paralysis on the left side Saturday, and is in a very serious condition. He was taken to the sanitarium for treatment, and his many friends hope that he will soon recover.

Bids will be received by Duncan Kennedy, Lieut.-Commander U. S. N., inspector eleventh light-house district, stationed at this port, up to noon April 18, for maintaning the buoys on St. Mary's river and Hay Lake channel and such others as may be authorized, for one year from July 1, 1898.

The schooner Geo. L. Colwell, also the engine and boilers of the A. D. Hayward were ordered to be sold April 7 at the instance of the Buffalo Ship Chandlery & Supply Co. The U. S. marshal, Eugene D. Whitney, has postponed the sale to April 21. The schooner is lying at Marine City subject to the above order of sale.

FLOTSAM, JETSAM AND LAGAN.

The Straits of Mackinac opened this season on March 28. This is the earliest opening for the 63 years of which records have been kept.

Eight bidders contested for the government work in improving Charlevoix harbor. Capt. Robert Rice, of Muskegon, secured the contract on the lowest bid of $5,748.55.

A report from Port Colbourne says that the Welland canal will not open for navigation until about the end of April. Pressure will be brought to bear upon the Dominion canal department with a view of securing an earlier opening.

There are a great many "shovel engineers" in New York steam vessels, but there are lots of good, capable and trustworthy men among them. Machinists do not always make the best engineers.—American Shipbuilder, New York.

The war defense fund of $50,000,000 is rapidly melting away. A total of $34,600,000 has already been spent or allotted. Of this the Navy Department had $20,000,000 and the War Department the balance. This amount was voted by Congress as a peace fund, but it quickly became a war fund.

The Detroit Graphite Manufacturing Co. state that they are doing a little over twice the business the first three months of this year that they did during the corresponding period of 1897—a period, at that, when they thought they were doing pretty well. They have doubled their capacity but are nevertheless obliged to work nights.

The father who induces his son to retire for the night without first partaking of the evening repast by giving him a copper cent, and then steals the coin while the lad sleeps, is a gentleman compared to the scoundrel who takes a newspaper for three or four years without paying for it, and then returns it to the office of publication worded "refused."—Ex.

The "Soo" line people have decided upon a new name for the steamer George H. Dyer, recently purchased for the route between Gladstone and Owen Sound. Permission has been granted by the Treasury Department for a change, and she will hereafter be known as the Hennepin. The name is that of a county in Minnesota, which embraces the territory covered by the city of St. Paul.

Towing into Duluth or around Duluth-Superior is likely to prevail at a lower rate than usual this season. Barry Bros. are out of it apparently, Inman has got lots of contracts and the W. H. Singer Co., or the White line, is also well ahead with contract work so that the firms can afford to tow outside tonnage at almost fuel cost. Such is the price of competition in the towing business.

John W. Powell, who was deputy collector of customs at Pultneyville, N. Y., during the four years prior to March 17 last, sent a most unique letter to Secretary Gage in tendering his resignation. "There is about as much use for a collector of customs at this port as there would be for one on a trout stream in the Adirondack mountains," he wrote, adding that the aggregate receipts for the four years in which he held office were $150, and that his salary for that time was $2,880.

The Chicago Inter Ocean says that 2,000,000 bushels of wheat will be shipped from Duluth to that port at the opening of navigation. This statement is not credited in Duluth. There is less than that amount of contract wheat in store there, and it is said that Mr. Leiter will not, unless something unexpected happens in the trade, wish to ship his Duluth wheat to Chicago. It is claimed that if there is any wheat in Duluth to go to Chicago it is a very small quantity and cannot exceed a cargo or two.

Capt.W.R.Taylor, who was for a great number of years engaged as inspector for Canadian lake underwriters and whose son, T. R. Taylor, now holds the same position, is still living in Kingston and is hale and hearty at eighty-seven years. Capt. Taylor is among the oldest of Canadian lake vessel masters now living. He began sailing out of Prescott, Ont., in 1832, in the steamer Queenstown, and later in the steamer William IV. Between 1834 and 1869 he commanded, among other lake vessels, the steamer Coburg, steamer Sir Francis Bond Head, schooner Thistle, schooner Shamrock, propeller St. Thomas, schooner William Caley, schooner Governor, barge Superior, steamer Comet, schooner Annie Falconer and schooner Annie Minnes.

Ore trains on the Mesaba railroad entering Duluth will not begin running until a day or two before the vessels are due at the docks in that city. The new dock extension will be ready for operation by the 15th inst. The Mesaba dock will be capable of shipping 2,500,000 to 2,750,000 tons this year. A prominent range railroad and mining man estimates that the output from the entire Mesaba range this year will be between 5,000,000 and 6,000,000 tons, and that the Vermilion range will ship 2,000,000 tons. The total shipments from Minnesota last year were about 5,500,000 tons. It is estimated by the same authority that the production of the Lake Superior region will be 14,000,000 tons.

The Tidal survey branch of the Department of Marine and Fisheries of the Dominion of Canada, publish for the first time, tide tables with tidal differences for the south-western side of the Gulf of St. Lawrence, from April to November, or practically during the season of navigation. Little has been known hitherto relative to the working of tides on this portion of the coast so the tables will prove of great value to those engaged in the Gulf of St. Lawrence trade. Regarding the current in Northumberland Strait, the following note on the relation of the current to the tide, is given in the Sailing Directions: "The tidal streams were observed in general to change their directions soon after it was high water or low water by the shore; but not unfrequently there were exceptions to this which it would be difficult to account for with certainty. Strong winds in the Gulf greatly influence the strength and direction of the streams in the Strait, as well as the height to which the tides rise; moreover, ... the two tides of the same day are of unequal heights, owing to the diurnal inequality; each of them being alternately and in turn the highest, and probably occasioning the stronger stream."

Theresa Thorndale in the Sandusky Register, is sportively innocent in her marine and news column from the Islands, Lake Erie. The following gem ought to make the Arrow, her owners and crew feel proud:

"The leading event of the past week was the advent of the Arrow which cleared from port on her initial trip Monday, March 28. In the afternoon of the previous day the steamer made her first appearance, and was duly received with cannon shot demonstrations, and a blowing of whistles. On her arrival at the islands the Arrow first paid her respects to Isle Ste. George, whither she went to deliver a consignment of freight and to wake up the inhabitants of that little isle. All her old officers and crew were on deck with the exception of the mate, the position being filled by Mr. Nicholas, of Vermillion. In her new dress of cream, with a vermillion painted keel just showing above the water line and tasteful touches of color upon her upper deck finishings, the Arrow looks as fresh as an Easter lily. The season is still too early for an especial rush of business, but the outlook for increasing traffic between island ports and that of Sandusky is reported good." Theresa sums up the general situation as follows: "Real, live news is just now a scarce article. While the islander is engrossed with his wines, his nets, or his early cabbage garden; the housekeeper is rushing her spring sewing, carpet beating and housecleaning, and is too busy almost to be sociable. Nobody during the week—as far as heard from—has got married, maimed or murdered; has eloped, embezzled or absconded, the island seems practically destitute of even a possibly good sensation, and affairs move along in jog-trot fashion."

AN EXPERT MODEL MAKER.

Walter Cubbin, the expert model maker at F. W. Wheeler & Co.'s shipyard, W. Bay City, has completed a model of the ocean tug Robert W. Wilmot, recently built at that yard.

The model is about three feet in length, built on the scale of one-fourth of an inch to the foot, and is perfect as to dimensions and details, including anchors, boat davits, timber heads, life boats, etc. It is mounted on a back-ground of white enamel and gold, nicely finished. Mr. Cubbin spent two months on the work and values the model at $150.

Mr. Cubbin has been employed exclusively at model making at Wheeler & Co.'s for the past year, and has made working and finished models of all the boats built at the yard during that time. He is now at work on models of the steamer and schooner now under construction at the yards.

LAKE MICHIGAN LUMBER RATES.

A movement to fix lumber freights by lake was put under way by a large meeting of vesselmen at Chicago on Saturday. Vessels of some 20,000 tons capacity were represented. A full schedule of rates about 12½ cents higher than prevailing last season was adopted. An average advance of ½ cent on cedar was also made. In September these rates are to be advanced 12½ cents per M. feet; in October another advance of that figure is to be made, and the same is to be done in November. All lumber carried after November is to pay 25 cents additional. Michigan City and St. Joseph are to take Chicago rates, but Milwaukee is to be 12½ cents less. A compact was made with the Lumber Carriers' Association, lately organized at Detroit, that the same rates should be made by both associations. It was agreed that the new rate should not go into effect until 40,000 tons were represented in the organization. The rates from all ports and on the various shipments from lath to lumber, ties, telegraph poles, etc., have been printed and delivered to all carriers in circulars or pamphlet form.

WHEAT AT DULUTH.

During the week ending Saturday, April 2, the receipts of wheat at the head of the lakes amounted to 378,706 bushels, and the shipments to 105,548 bushels. There are 3,506,483 bushels in store and 105,000 bushels afloat. The amount of grain afloat will be greatly increased this week.

FORE AND AFT COMPOUND ENGINES.

(ILLUSTRATED.)

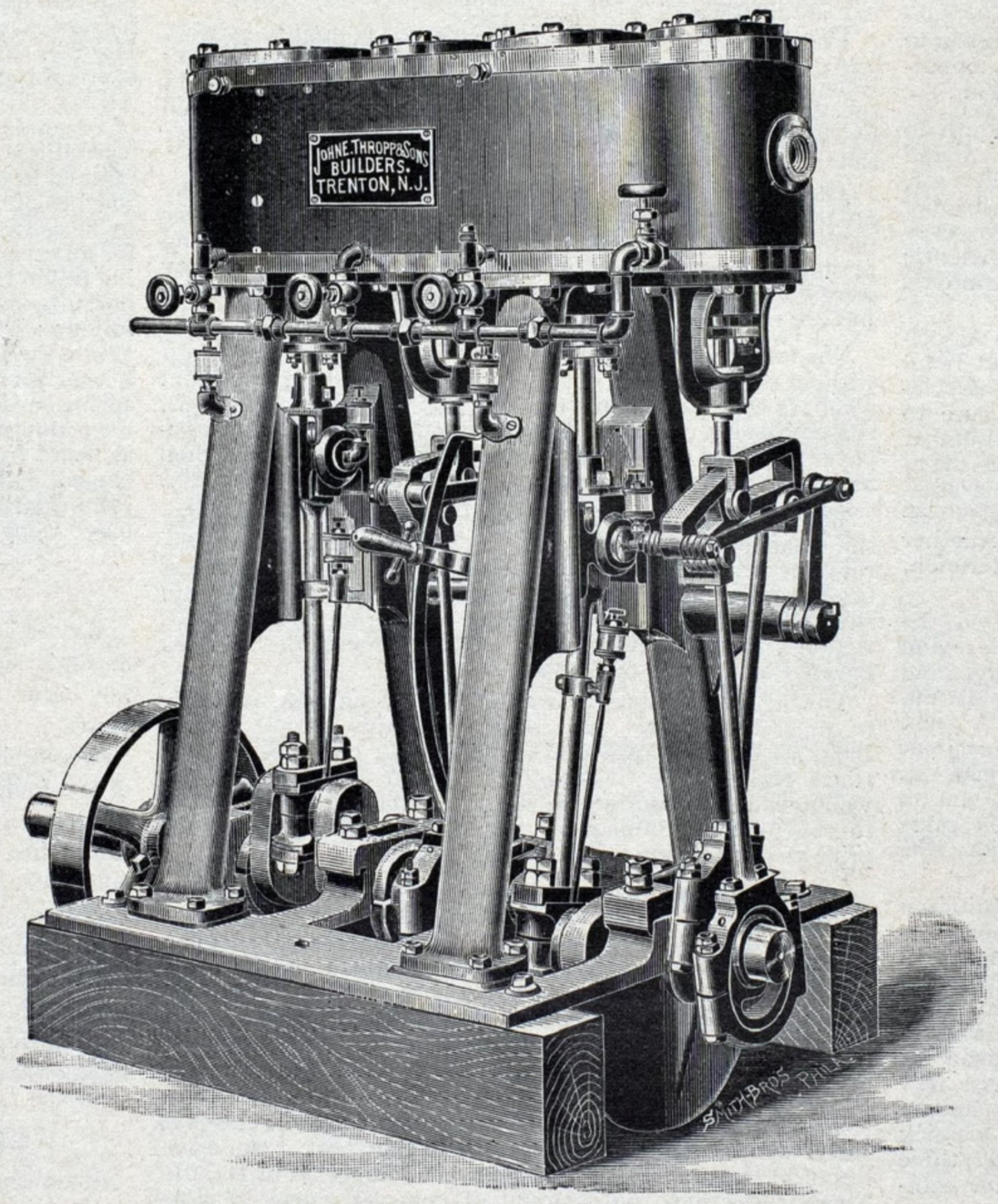
The increasing demand for compound engines has proved that they are entirely satisfactory and considered by some to give better results on a small basis than the triple expansion engine. For steam yachts and tow boats this is especially the case, while even for passenger and freight steamers the compound engine holds its own in popularity. We illustrate herewith a style of compound engine which has proved particularly satisfactory in use, and has been found also splendidly adapted for electrical purposes, which is a considerable desideratum nowadays. This engine is designed and manufactured by the John E. Thropp & Sons' Co., at Trenton, N. J., a concern which in the past few years has so increased its capacity and output as to become a first-class corporation.

In the design and style of this fore and aft compound engine, the manufacturers have kept in view the economy of space, strength, proportions and durability for 300 pounds steam pressure, which they have experienced with the various water tube boilers on the market. The experience and practice in building and remodeling various kinds of engines for the last twenty-five years have convinced them that the best materials and workmanship are none too good, and a very highly finished engine is not so important. This engine has, therefore, been made a specialty with them, although they are in a position to make single or triple expansion engines any size their customers desire. A brief description is as follows:

The cylinders are supported upon hollow cast-iron housings, which are securely fastened to a substantial bed plate. The bed plate is constructed so as to catch all the waste oil and grease, which overcomes the saturation of the hull. The housings are bored in the lathe, also bed plate, after being babbitted, making the engine machine lined. All castings are made of the best charcoal iron, hard, close and free from sand holes. The valves are of the balanced piston type, which overcomes the serious objection often encountered in high speed engines, and saves the wear and tear on the link motion and eccentrics. For reversing, the link motion made of steel, fitted with case-hardened block and pin is used.

The crossheads are made of steel, fitted with brass gibbs. The crank shaft is large diameter, made of steel, with large crank pins, which insures a smooth working engine. Connecting rods, eccentric rods, piston rods and valve stems are made of steel. The valve stem guide is fitted up with brasses, which are adjustable. All wearing parts are built so as to take up all lost motion. Engines are neatly jacketedwith Russian iron, accurately fitted, and have all necessary oilers. Each engine is tried and thoroughly adjusted before leaving the works.

These engine builders are now running night and day on marine engines and general machine work. They have just shipped machinery complete to R. F. Lytle, Hoquiam, Washington, for a twin screw boat, comprising two engines, boiler, condenser, propellers, etc., also to the Board of Trade, New Orleans, La., a triple expansion engine for an experimental boat, which, it is claimed, will revolutionize the speed of modern boats.



ENGINES BUILT BY JOHN E. THROPP & SONS CO., TRENTON, N. J.

THE UNITED STATES PRODUCES THE MOST PIG-IRON.

Accepting the figures given by Fairplay, London, it is admitted that the United States rules the world in the production of pig-iron, and as is well known, the major portion of this vast industry is transported over the Great Lakes. Our contemporary gives the following significant figures in its last issue ;

"Enormous as was the production of pig-iron in America (United States) last year, this year it promises to be greater than anyone expected. The February returns show a make of 229,823 tons per week, and it is increasing. The year's total will almost certainly exceed 12,000,000 tons, and the problem is how can such an enormous amount of crude iron be absorbed in addition to the European output? In America (the United States) the iron markets are not in the least nervous about it. Indeed one authority is doubtful if the supply of pigs will be found equal to the demand of consumers—such is the growing activity in iron and steel manufacturing. As to the supplies of pig iron, I have taken the trouble to sum up the production of the three great producers in 1896 and in 1897:

Output of	1896 Tons	1897 Tons
United Kingdom	8,563,209	8,789,455
United States	8,623,137	9,652,680
Germany	6,360,982	6,889,067
Total	23,547,328	25,331,202

The steel rail pool and the nail trust have been reorganized, the prices of iron and steel sheets are going up notwithstanding the increased output, and Bessemer pigs continue to advance. It is stated, that as regards finished iron and steel, the demand has by no means yet reached its maximum, and that the limit of consumption has not yet been approached.

MARITIME LAW.

THE E. V. McCAULLEY—THE IVANHOE.

RILATT ET AL. V. THE McCAULLEY ET AL.

(*District Court, E. D. Pennsylvania, January 7, 1898.*)

1. TOWAGE—LIABILITY OF TUG OWNERS. Tug owners are not insurers of the safety of their tows, but are only responsible for the exercise of such care as the service requires, and cannot be held liable for a loss in the absence of proof of carelessness. Error of judgment respecting the weather at the time of starting, or in other respects on the voyage, is no ground of liability.

2. SAME.—Where the captains of tugs engaged to tow a dry dock from Hoboken to Philadelphia waited three days while the wind was eastward and the weather bad,and on the following morning, finding the wind in the northwest, the sky clear, and the storm signals taken down, started on the voyage, but encountered rough weather, resulting in the loss of the tow, held that their failure to observe or heed the fact that the wind had passed around from the east northward instead of southward was not negligence, as it did not sufficiently appear that a change in the one way rather than the other indicated a longer period of good weather.

3. SAME—DEFECTIVE HAWSER. Alleged defects in the hawser are not sufficient to charge tug with negligence,where it appears that the hawser did not break until the tow was sinking, and therefore was free from any defects contributing to the disaster.

This was a libel by Rilatt Bros. against the tugs E. V. MacCaulley and Ivanhoe, to recover damage for the loss of a tow.

FRIDAY SUPERSTITION EXPLODED.

Friday, April 1, was the date of opening navigation this summer and considerable talk has been indulged in regarding the old superstition of disaster following Friday sailings, etc.

The fatality that is generally attached to a Friday was exemplified in the case of the steamer Colonist, says the Kingston News. After having been on the Marine Railway at Portsmouth, she was launched in the forenoon of Friday, April 16th, in the year 1869. On the following Friday she left for Chicago. In the fall of the same season on Friday, Nov. 20, she was driven by heavy weather over a bar at Manitowoc, on the west shore of Lake Michigan. The pounding she received in crossing the bar detached a blade from her propeller. A steam pipe burst and was the cause of the death of Charles McEwen, of Kingston. She was repaired at once and continued on her voyage. The next Friday was another fatal day for her. On the morning of Nov. 27 she sprang a leak when twenty miles northeast of Hammond's Bay, on the west shore of Lake Huron. There was a heavy snowstorm at the time and the wind was from the S.S.W. In 40 minutes from the time the leak was discovered the fires were extinguished by the water. The lifeboats were lowered and the crew got into them. The captain, being the last to leave the sinking craft, stepped from the deck into his boat. The small boats were about 50 feet away from the vessel when she foundered in deep water. The leak was in the stern pipe, which no doubt was caused by the pounding she received i n crossing the bar. The crew, after having been in the lifeboats thirteen hours, were finally picked up by the wrecking steamer Clematis. Some of the crew had their fingers and toes frost-bitten. This account is taken from her log book and is certified to by Mr. Barnes of this city, who was her chief engineer. The peculiar point is that all her misfortunes happened on Friday.

The propeller St. Lawrence, however, had a very different career. She, too, was launched on a Friday from the Kingston Marine Railway on April 8, 1870. Her first voyage was to Toledo, leaving Kingston on the following Friday. Mr. George Barnes was her chief engineer also. She had good luck all season, and her owners, the present G. E. Jaques & Co., of Montreal, were particularly fortunate.

In the spring of 1876 the late Mr. Norris, of St.Catharines, had the Scotia and four other vessels laid up at Port Maitland, on the north shore of Lake Erie, and the whole fleet left for Duluth on Friday. These boats had a successful career that season. This shows that the "Jonah day" did not affect them. The maiden trip of the steamer Persia was made on a Friday also. She started from St. Catharines for Chicago, and since then she has been marked by a regular series of successful seasons and has been very fortunate. Capt. Scott of this city was in command of the four above mentioned steamers at the time and is yet in command of the Persia.

EASTERN FREIGHT REPORT.

Messrs. Funch, Edye & Co., New York, report the condition of the eastern freight market as follows: The tendency of grain freights has been towards a lower level, and at the time of writing, the rate for Cork f. o. for April boats is 3s. 4½d., for May, 3s. 3d., and the enquiry not particularly active at those figures. The bulk of the engagements reported is for account of a Chicago speculator, who is sending large quantities of the wheat he has held to the sea-board, and finds himself practically able to dictate the freight rate for these shipments. The freights obtainable for large vessels to load on berth terms have likewise somewhat weakened, and 3s. may now be described as top figure, although a good enquiry for oats now prevailing, in many cases a proportion of oats at from 4½d.@6d. under the heavy grain rate could be obtained, and to this extent rates improved. In other trades little is doing, and the enquiry for steamers for general purposes is not active.

Business in sail tonnage during the past week has been light, but rates have not undergone any noticeable change. The establishment of new steamship lines to Australia tends to limit the sphere of sailing vessels still further, and the fact that the great number of large vessels which hitherto found profitable employment in this trade, will have to look out for other business, cannot fail to exercise a depressing influence on the general market.

OBITUARY NOTICES.

HARRISON C. PEARSONS.

Harrison C. Pearsons, a former well-known builder of lake vessels, residing at Ferrysburg, Mich., died March 19. Mr. Pearsons was born on January 25, 1819, in Allegheney county, N. Y., he was therefore an octogenarian. He early evinced a liking for the higher sciences and mathematics, and became in time an authority in civil engineering. Early in life Mr. Pearsons engaged in vessel construction, and for a long time was employed by the Northern Transportation Company in building steamers at Ogdensburg, N. Y. In 1866 he moved to Michigan and established a shipyard at Ferrysburg. From this yard were turned out many vessels, among the number being the schooners Laketon, Major N. H. Ferry, R. P. Mason and F. M. Knapp. During President Grant's administration Mr. Pearsons was appointed local inspector of hulls for the Grand Haven district, which position he held ten years. The late Captain Dodge was his successor.

Probably Mr. Pearsons' greatest achievement was the invention of a solar attachment for surveyors' transit instruments, by means of which true north and south lines may be obtained by solar observation, irrespective of any deviation of the compass.

Captain Pearsons was well and favorably known all over the lakes, having contributed many interesting and instructive articles on navigational matters to the MARINE RECORD, besides being the author of a valuable work on practical navigation. In his later years Mr. Pearsons had been employed quite extensively in the adjustment of compasses. Although he had never sailed he was fully competent to navigate a vessel, as he had made navigation a life study and was a thorough student in that subject. The deceased was one of the founders of the Michigan Engineering Society, and at the nineteenth annual meeting of that society in Port Huron last December, it was unanimously voted that he should be placed on the list of honorary members, in recognition of his many valuable services to the society. Engrossed copies of the resolution were sent to Mr. Pearsons.

Mr. Pearsons is mourned by his wife and five children, Herbert W., of Duluth, Albert C., of Colorado Springs, C. Alton, of Duluth, Mrs. Byron E. Parks, of Ferrysburg, and Harry D., of Duluth. A brother, Galen W. Pearsons is a civil engineer in Kansas City.

CAPTAIN H. G. EDWARDS.

Captain H. G. Edwards was 72 years old on his last birthday. The captain was well-known on the lakes, although he has not taken an active part in sailing for the past nine or ten years. The last vessel he sailed was the schooner M. Capron for a number of years, and he also sailed the the scow-schooner Blue Bell. In that craft he spent a number of years trading between Pine Lake and Two Rivers and Manitowoc. He likewise sailed the schooner Clipper City when she first came out in 1854, and he was in command of the steamers Bertha Barnes, and C. N. Johnson at the time when they were considered large A1 vessels.

The captain was a genial, kind-hearted old sailor, and in Manitowoc, where he made his home for so many years, his passing away is like that of an old landmark. Some six years ago his wife died and was taken to Manitowoc for burial, and to the same place his remains were taken from Charlevoix on the 18th of March for interment.

THE OUTLOOK AT DULUTH.

The following may be considered as a conservative report from the head of the lakes, by the Duluth News.

About 2,000,000 bushels of Duluth grain have been chartered to go forward at the opening of navigation. This is a larger jag than it had been generally supposed was chartered. During the past few days considerable chartering was done, and it is expected that before the end of the present week the total of grain chartered to go forward will have been materially increased. The bulk of the chartered grain is rye, oats and flax. There has been some wheat and some corn tonnage placed, but market conditions have not been encouraging for moving the former commodity, and there has been a disposition also to not force corn forward. It is known that some corn has been chartered for Kingston. The wheat rate is 1⅞ to 2 cents, with shippers' option of sending either to Chicago or Buffalo. The corn and rye rate is about 1⅝, and the flax rate 1¾ to 1⅞ cents. In certain cases the shipper has the option of exchanging wheat for coarse grain. There is 11,750,000 bushels of all grain in store here.

Lansing R. Robinson, agent of the Union Transit Company at Duluth, returned yesterday from the east. He says that the prospects for a satisfactory package freight business this season, as far as west bound business especially is concerned, were never better. Mr. Robinson says that the Pittsburg district will contribute heavily this year to the west bound business of the package freight lines running to Duluth. Already there is a great deal more freight at Cleveland than usual awaiting shipment by boat to Duluth. This has come principally from Pittsburg territory. Joseph Sargent has just been appointed agent at Pittsburg for the Union Transit Company. The east bound business via Duluth does not look promising as regards flour, but copper shipments will be heavier than in any previous year, and wool is a commodity on which it is said the package lines are counting for a good volume of bnsiness.

Although there has been a very large quantity of lumber sold to go forward after the opening of navigation, it is said that little or nothing is under charter. The shippers are confident that the Lumber Carrier's Association will not be able to maintain the minimum rates agreed on, while on the other hand representatives of the association are equally confident that the rates will be maintained. It is said that owners of vessel tonnage representing 90,000 tons of the 120,000 tons of vessel property that is considered as regularly catering to the business of lumber carrying, have signed the agreement of the association.

"We have enough tonnage in the association now to maintain the rate if the owners representing it will stick together, but we have hope of getting all the tonnage in the association, and then it will be easier to stand up for living rates," said an owner of lumber carrying tonnage yesterday.

NEW TONNAGE.

Sailing and steam vessels built in the United States and officially numbered as shown by the records of the Bureau of Navigation, Treasury Department, during the quarter ended March 31, 1898.

	WOOD.				STEEL.	
	SAIL.		STEAM.		STEAM.	
	No.	Gross.	No.	Gross.	No.	Gross.
Atlantic and Gulf	39	3,828	27	1,993	6	2,400
Pacific	8	349	10	1,881	..	.....
Great Lakes	..	.....	1	73	..	.....
Western Rivers	..	.....	20	2,440	..	.....
Total	47	4,177	58	6,387	6	2,400

	No.	Gross Tons.
Total Sail	47	4,177
Total Steam	64	8,787
Grand Total	111	12,964

QUARTER ENDED DECEMBER 31, 1897.

	No.	Gross Tons.
Total Sail	117	5,975
Total Steam	68	12,414
Total	185	18,389

A NEW STEAMBOAT LINE.

The Great Northern Transit Co., limited, Collingwood, and the North Shore Navigation Co., limited, Collingwood, will establish a new steamboat line between Collingwood, Owen Sound and Duluth, to be known as the Georgian Bay and Lake Superior Steamboat Line, calling at Sault Ste. Marie, Port Arthur, Fort William and other local ports, and connecting with local lines to and from all Georgian Bay ports; calling also at Mackinac Island during the months of July and August. The steamers, City of Collingwood and Majestic, will be placed upon this line at the opening of navigation.

Shippers of freight to and from all ports in Ontario, Georgian Bay, Lake Superior ports, the Northwest, British Columbia and the Klondike, will find the service first-class in every particular.

A NEW type of rapid fire coast defense gun, designed by Capt. Frank. E. Hobbs, of the United States army, which has just been completed at the Watertown arsenal, will shortly be the subject tests at the government proving grounds at Sandy Hook. This gun is made from a single forging. It weighs 7,150 pounds, is of steel, rifled and about 20 feet long. With a load of 17 1-2 pounds of smokeless powder, it will throw, it is claimed, a 55-pound projectile six or seven miles accurately, with a velocity of 2,700 feet a second.

MARINE ENGINEERS' BENEFICIAL ASSOCIATION.

The National Marine Engineers' Beneficial Association of the United States was organized in Cleveland, Feb. 21, 1875, by ten marine engineers. From this small beginning they have grown until they now cover the entire United States, there being at present one hundred and four subordinate associations, comprising the engineers on the Great Lakes as well as the Ohio and Mississippi rivers and the Atlantic and Pacific coasts, with a membership of over 7,000 engineers with national officrs: George Uhler, President, 1609 Brown Street, Philadelphia, Pa.; Frank A. Jones, Vice-President, 1616 La Fayette Street, San Francisco, Cal.; Thos. F. Dowd, Secretary, 17 S. Jefferson Street, Chicago, Ill.; John J. A. Williams, Treasurer, 619 St. Andrews Street, New Orleans, La.

CORRESPONDING SECRETARIES, 1898.

NO.	
1	Theo. A. Myers.....10 Exchange St., Buffalo, N. Y.
2	Herbert H. Farr.....45 Randall St., Cleveland, O.
3	Arthur D. Ostrander.....Merrill Block, Detroit, Mich.
4	Jno. F. Conley.....104 Evergreen Ave., Chicago, Ill.
5	John J Brown.....251 S. Washington St., Baltimore, Md.
9	Chas. G. Forsyth...659 Milwaukee St., Milwaukee, Wis.
13	Geo. P. Wilson.....4139 Liedy Ave., Philadelphia, Pa
15	John A. Younger.....80 Market St., Algiers, La.
27	West Bay City, Mich....Jno P. Stater, 1010 Garfield Ave.
33	Consolidated New York.....William J. DuBois, Topkinsville, S.T.
35	San Francisco, Cal.....John J Sheary, 36 East St., S. F.
36	New Haven, Conn.....Joseph Thomas, 57 Sea St.
37	Toledo.....Edward D. Lock, 1638 Broadway.
38	Seattle, Wash.....T. H. Compton, 73 Starr-Boyd Bldg.
40	Galveston, Texas.....Harry N. Powell, 1315 Avenue G.
41	Portland, Oregon, J.W. Collyer, Goble, Columbia Co., Ore
42	Jacksonville, Fla.....John Einig, Box 624.
43	Port Huron, Mich.....George Miller.
44	Manistee, Mich.....Christ Dahl, 524 West Second St.
46	Clayton, N. Y.....Lewis A. Kenyon.
47	Sault Ste. Marie, Mich.....Peter Kelly, Box 31.
48	Sandusky, Ohio.....John Irving, 1510 Monroe St.
51	Muskegon, Mich. James Cummings, Hackley Bank Bldg.
52	Marshfield, Oregon.....Clyde C. Lightner.
53	Marine City, Mich.....Harry Stone.
55	Cheboygan, Mich.....Chas. Adams.
57	Rondout, N. Y.....E. B. Meeker, 71 Abeel St.
58	Georgetown, S. C.....Geo. D. Anderson.
59	Boston, Mass.....John T. Cook, 206 Byron St.
62	New London, Conn. N. S. Lawrence, 30 Connecticut Ave.
63	Albany, N. Y.....Chas. H. Ellis, 316 Clinton Ave.
65	Charleston, S. C.....C. C. Hasson, 90 Church St.
67	Saugatuck, Mich.....Wayne Coats.
70	Astoria, Oregon,.....F. A. Sprague, 406 Bond St.
71	Wilmington, N. C. W.A. Furlong, care C.F.& Y.V.Ry.Co.
72	Oswego, N. Y.....Thos. Navagh, 40 Lake St.
73	Green Bay, Mich.....E. B. Kellogg, 711 Walnut St.
74	Providence, R. I.....Frank E. Mahon, 670 Eddy St.
75	Alexandria Bay, N. Y.....A. J. Thompson.
76	Grand Haven, Mich.....Orson Vanderhoef.
77	Manitowoc, Wis.....John A. Flint, 818 Jay St.
78	Duluth, Minn.....F. B. Barrows, 1128 East Third St.
80	Albany, N. Y.....R. P. Cook, 46 Elm St.
81	Pensacola, Fla...Jas. L. Sweeney, 204 East Saragossa St.
82	Bath, Maine.....Fred H. Gowell, 427 Middle St.
83	Bangor, Me.....E. O. Eaton, Box 935.
84	Mobile, Ala.....N. K. Ludlow, 60 South Royal St.
85	Alpena, Mich.....Arthur J. Irwin, 427 Washington Ave.
86	Marinette, Wis.....Alfred A. Larson, 1114 Carpenter St., Menominee, Mich.
87	Detroit, Mich. .Geo. B. Milne, 503 Commonwealth Ave.
88	Sturgeon Bay, Wis.....C. O. Chapman, S. B. Canal.
89	Ogdensburg, N. Y.....C. E. Davidson, 29 Congress St.
91	Ashtabula Harbor, Ohio.....Martin Joyce, 8 Spruce St.
92	East Saginaw, Mich.....Harry E. McArthur, 17 McCormick Bldg
93	Washington, D. C.....Jas. Nash, 918 F. St., N. W.
94	Washington, N. C.....Geo. R. Jones.
95	Port Clinton, Ohio....Geo. A. Semon, care S. T. Collins.
97	South Boston, Mass. Geo. B. Deering, 317 Commercial St.
98	New Orleans, La.....Samuel W. Dalton, 622 Joseph St.
99	Aplachicola, Fla.....R. L. Pickett.
101	Norfolk, Va.....P. H. Wilkinson, Box 465.
102	South Haven, Mich.....Chas. La Bounty.
103	New Berne, S. C.....C. H. Hall, Box 512.
104	Moss Point, Mass.....D. E. Norris

BIDS FOR BUILDING THE CHICAGO FIRE BOAT.

The following bids were tendered for the construction of the large, new fire boat for service at Chicago:

Racine Boat Co., Racine Wis.	$69,000
Chicago Ship Building Co., Chicago	68,500
Globe Iron Works Co., Cleveland	57,882
Craig Ship Building Co., Toledo	48,950

The Craig Ship Building Co. being the lowest bidder the contract will no doubt be secured by that firm, but they must have done some very fine figuring to get their bid down to so close a limit.

Captain Finch, keeper of the Milwaukee life-saving station, has been dismissed from the service for absenting himself from his post without permission. The dismissal dates from February 27. It is understood that Captain Finch has gone to the Klondike gold region.

MARINE RECORD

ESTABLISHED 1878.

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CLEVELAND, O., APRIL 7, 1898.

FROM the reports of casualties at the Straits of Mackinac it appears that vessels have been forced out of port a little too early this season. Ordinary cargo boats are not ice crushers.

PLANS and specifications for the large steel Ann Arbor railroad car ferry are now in the hands of the builders and bids are expected to be submitted early next week. The Craig Ship Building Co., Toledo, will build the large fire boat for Chicago at their bid of $48,950, the highest bid being $69,000 and the next within $500 of that sum.

ENGLISH papers state that the Admiralty have placed an order with the Parsons Steam Turbine Company for a high speed torpedo boat destroyer, in which the propelling engines will be steam turbines. In the opinion of the authorities the scheme seemed justified on the showing made by this type of motor in the performances of the Turbinia last summer.

A TABLE of amplitudes of the sun's rising and setting for the several parallels of latttitude covering the lakes will be given each week in the columns of the RECORD during the season of active navigation. By giving a brief explanation of the table, we hope to make this feature of a more direct and posieive value to all engaged in the practical handling of vessels on the lakes.

THE rush of grain laden boats from Chicago to Buffalo set in last Friday, and almost every vessel that held grain for winter storage has made, or is making her first passage for the season. The next corner for vessel owners to round is in procuring upbound freights for the large tonnage now bunched on Lake Erie. The many ore charters will no doubt keep a number of the big carriers out of the grain trade, but even with this consolation the outlook for paying freights is, to say the least, anything but bright at this time.

IN another column will be found the monetary award given by the managers of the Great Lakes Register to those found most proficient in the science of navigation, as applied in lake sailing. The questions covered by the examination, although widely in advance of the qualifications required by the government, through the local inspectors of the Steamboat Inspection Service, are nothing more than what is actually required in the safe navigation of the lakes and were all contained in the first course of instruction as given in the Chicago Nautical School as follows: The Arithmetic of Navigation; The Compass and its Details; Variation and Deviation of a Compass; Different Methods of Determining Same; Compass Adjustment; The Subject of Time, Declination, Etc.; Charts and Chart Construction; Plotting Position by Bearings; Weatherology; Law of Storms.

TRUTH—NOT POETRY.

The following is, we think, from the columns of a New York daily, but of this we are not certain. "At this moment up rises Teddy Roosevelt to give utterance to a great truth. It is this: Yankee invention and Yankee knack cannot turn tug boats into ironclads in 30 days. In other words, a $50,000,000 appropriation is $50,000,000 thrown away, when time is not given to the proper expenditure thereof.

Mr. Roosevelt points out one of the great defects in our system of government, when he shows how we expect to do everything with money and allow no time for money to be turned into proper material.

We have obtained the character in Europe of a strong bluffing nation, and certainly we deserve it. Take President Cleveland's Venezuela message of two years ago, which wound up with a distinct threat of war. Suppose England had accepted his challenge and refused all diplomatic overtures on the Venezuela boundary question, where would we have been on the water? England's navy would have swept ours out of existence in thirty days. Possibly it was true that England could never have fought us on that issue, but how could President Cleveland have known that when he sent his bluff to Congress? A nation should never challenge another to war unless it feels itself prepared for the events. We have never at any time had the naval force we should have, nor have our coast cities had the defense that the situation demanded. Nevertheless, we have been bluffing, and now Congress, not McKinley, has put up one which we will have to make good.

In a contest with Spain, such as seems inevitable, the outcome in the long run is not questionable, but on the start the two countries are not unevenly matched on the sea. That is the humiliating part of it, that a bankrupt nation should be able to even annoy us in our own waters, and all because in time of peace we do not prepare for war, but content ourselves with making faces at nations across the ocean.

We shall defeat Spain, and we shall learn a lesson from the encounter. A nation's bark should never be more impressive than its bite.

EMPLOYER'S LIABILITY.

The suit of Patrick Shea, seaman, against the steamer Osceola, recently tried in the United States court at Milwaukee establishes an important precedent, in that it declares that the captain of a lake vessel is not a co-employe, with the seaman. Following this line of reasoning Judge Seaman extends the rule to exempt the second mate from this class, while on deck in his watch. The decision of the court upon these two points is looked upon as one of the most important in employer's liability cases that has been handed down for a long time.

Judge Seaman entered the decree, awarding Shea $2,500 damages. The circumstances of the suit make it one of the most interesting that has come up in admiralty for years. Shea was employed on the steamer, and when about three and one-half miles out from Milwaukee was summoned by the second mate to assist in making prepartions for going into port.

In doing this work a small derrick was used, one that was supported on the deck by two small wooden skids with a V-shaped runway. Judge Seaman severely criticised the construction of the derrick in his charge to the jury. The gangway weighed 1,500 pounds, and while it was being lifted the ends of the derrick slipped out of the skids. Shea was felled to the deck. Shea's injuries are such that when he allows the weight of his body to fall upon his injured leg the knee bends inward, the ligaments on the one side of the knee joint being almost wholly destroyed. The jury allowed him $3,562.50, but the amount of damages awarded by juries in admiralty are subject to the discretion of the court. The admiralty courts never allow a verdict which will give a person as much as he would be able to earn. Shea is forty-six years of age and is in fairly good physical condition, notwithstanding his injury. He testified that he earned $30 per month for nine months of the year and virtually nothing for the three winter months. After considering all the circumstances, Judge Seaman decided that $2,500 was a just reward to compensate him for what he was deprived of earning by reason of the injury and for the suffering he was obliged to undergo.

THE NICARAGUA CANAL.

The navigation of the seas and the commerce of the world, and particularly of the United States, would be very much facilitated by the completion of a canal which would connect the Atlantic and the Pacific oceans. As the foreign trade of the country increases and we reach out to introduce our products into other markets, the need of a shorter way from our Atlantic ports to the Pacific Ocean impresses itself upon citizens of United States with increasing force.

On several occasions the United States government has interested itself in this project, and at one time entered into negotiations for, and secured Nicaragua's consent to, a treaty in reference to the construction of the canal. This international agreement, however, was never ratified by the Senate of the United States. There is no desire that the United States should bring upon itself "entangling alliances" by reason of its interest in this great public improvement, which is designed not to help the people of this country alone but all mankind. By no conceivable system of administration could the shipping of other countries than this one be discriminated against on this international highway. It should be managed and regulated like the Suez canal, open to all vessels prepared to pay the tolls, arranged upon an equitable and uniform scale, and in assisting in such a work the Government of the United States can only benefit and never can harm the people of other nations.

The Nicaragua canal would reduce the distance for water-borne commerce from New York to the Mexican and Central American west coast ports from about 11,000 miles to 3,000 miles, and from New York to the ports of Peru (Callao) from 9,640 to 3,744 miles; to the ports of Chile (Valparaiso) from 8,440 miles to 5,014 miles. It would make the ocean journeys from our Atlantic seaboard to Melbourne 3,000 miles shorter, and would reduce the distance to China and Japan 5,000 or 6,000 miles. It would bring the eastern part of the United States into a more direct connection with every Pacific port, cheapening freights, reducing the time of passage and the length of the period which must now intervene between the date of the shipment of the goods and the date of delivery to the purchaser, thus putting the American manufacturer in a vastly better position to gain and to hold his place in markets in which our European rivals are to-day much stronger than we are.

LAKE FREIGHTS.

There has been Marquette tonnage placed this week at 55 cents to November, though 60 cents was paid on some early charters. From Escanaba 45 cents is freely offered and has been taken by several small carriers, but others won't look at anything less than 50 cents.

Corn, Chicago to Buffalo, is now quoted at 1⅛ cents.

There is very little doing in coal, and vessels are leaving Buffalo light.

THE LIGHT-HOUSE SERVICE.

Several appointments and transfers in the light-house service have been made by the Treasury Department. Those along the Great Lakes are as follows: John Safe, keeper at Sandusky Bay, outer harbor, transferred from Horseshoe Range, Buffalo; George H. Beamer, assistant keeper at Big Bay Point, Mich.; Henry T. Luxton, assistant keeper at Big Sable, Mich., transferred from Charity Island; Edgar B. Adams, assistant at Charity Island, transferred from Thunder Bay Island; John P. Jacobi, keeper at Detour Island, Mich., transferred from Outer Island; Otto Bufe, assistant keeper at Point Iroquois; Jocob H. Gibbs, assistant keeper at Round Island, Straits of Mackinaw.

ERIE CANAL OPENING.

It is now said that navigation of the Erie canal will not open un il between the 1st and 5th of May. The improvements cannot be completed before the last of April. The uncompleted work includes wall work at slip No. 3, and repairs to the gates of the locks at Tonawanda.

Canal men much desire an earlier opening, holding that the grain fleet will be down from Chicago, and the railroads will secure the freight. There is a fleet of about seventy-five boats at Tonawanda, and their owners are extremely anxious to get to work.

A NEW SHIPBUILDING CONTRACT.

The Northern Lake Steamship Co. has placed a contract with the Cleveland Ship Building Co. for a new steel steamer of the following dimensions: 438 feet overall, 414 feet keel, 50 feet beam and 28 feet molded depth. To be fitted with triple-expansion engines and Scotch type boilers to be tested for 165 pounds steam. Ship to be completed this fall. The foregoing is the most important shipbuilding contract for the week.

THE WELLAND CANAL OPENING.

No date has yet been fixed for the opening of the Welland canal, and until that time communication will be shut off between lakes Erie and Ontario.

Representations will be made to the Dominion Government with a view to having the canal opened as early as possible and in this connection it is beyond the comprehension of a number of people to find any reason for the canal not opening as early as ice would permit of the free working of the locks.

The Kingston News of recent date says: "On account of the early spring some of the marine men think that the Welland canal should open for navigation earlier than usual this year. Looking at the matter from all points of view, the opening of the canals before the usual time would cause considerable trouble and delay along the line. In the first place, in the natural course of things the canal is supposed to be open about April 25, or May 1, and the majority of boats and boatmen figure on this date to have their boats ready. Then, when the Welland canal is opened the St. Lawrence canals should be ready too; all canals should open together; by this arrangement grain and other produce in transit from the West to the seaboard will not be delayed en route. Steamship companies figure on the canals opening at the usual time, and arrange to have their steamers in Montreal ready to receive the grain. An earlier opening of the canals than usual would cause trouble and delay in Montreal. Already at this port many thousand bushels of grain are stored, ready to go forward on the opening of the lower canals. If the Welland canal should open before the lower canals, it would simply mean a blockade at this port. For this reasons an earlier opening of the canals than usual is undesirable."

THE LUMBER CARRIERS' ASSOCIATION.

The executive committee of the Lumber Carriers' Association decided this week to allow all vessels belonging to the association to carry mill culls at the minimum price, the additional cost of the unloading to be paid by the consignee. The membership fee of all brokers was reduced to $5 and each member will be asked to fly a pennant bearing the letters "L. C. A." from his vessels. Alvin Neal, Port Huron, enlisted his twelve boats in the association. Their tonnage is 5,500. This leaves only fifteen vessels out of the entire lumber fleet trading to Lake Erie to join the organi- zation.

A conference was held on Monday at the office of Henry A. Haigh at Detroit, of representatives of the Lumber Carriers' Assoeiation and the executive board of the International Longshoremen's Union. The matter under discusssion was the closer affiliation of the workings of the two organizations. The question of imposing fines on all boats that are not owned by members of the association was discussed at length and an agree. ment was reached that the executive board of the longshoremen would recommend to its many local unions that they enforce a fine on boats not on the books of the Lumber Carriers' Association.

President Comstock of the Lumber Carriers expressed himself to Harry C. Barter, secretary-treasurerof the longshoremen, as being entirely satisfied with the result of the conference, which was attended by Secretary A. W. Carpenter, of Port Huron, and Capt. W. E. Rice of the same city. Secretary Barter stated that there would be harmony between both organizations during the present season, as there was no disposition on either side to oppose one another after they have decided to agree on a scale of wages that is considered just and proper to all interests.

NEW SUPERINTENDENT AT THE "SOO."

Assistant United States engineer Joseph Ripley has been appointed general superintendent of St. Mary's Falls ship canal at Sault Ste. Marie, Mich., which carries with it the general supervision of all the important government river and harbor work in that district. Mr. Ripley succeeds Mr. E. S. Wheeler, who last summer was appointed engineer on the Nicaragua canal commission.

Mr. Ripley has been in the employ of the government at the "Soo" since 1877. when he was appointed inspector of masonry on the Weitzel lock, which position he held until that work was completed in 1881. Since that time he has been in active charge of the extensive channel improvements on St. Mary's river, which included the construction of the new Hay Lake channel and the subsequent deepening and widening of nearly the entire stream, a work of considerable magnitude.

INSPECTOR OF THE ELEVENTH LIGHT-HOUSE DISTRICT.

BRIEF SYNOPSIS OF SERVICE CAREER.

Lieut. Commander Duncan Kennedy U. S. N. was born in Albany, N. Y., 1847. Entered Naval Academy, 20 July, 1864; graduated 1868. Served in the Delaware, flagship, Asiatic station, '68–'69; returned home in Iroquois, '70. Promoted to Ensign, 1869, Master 1870. Served in Guerriere, European station, '70–'72. Promoted to Lieutenant, 1872. Torpedo station '72–'73. Served in Pensacola, flagship, Pacific station, '73–76. Instructor in Ordnance & Gunnery, Naval Academy, '76–'79, making two practice cruises in steamer Mayflower. Served in Pensacola, flagship, Pacific station, '79–'82. Instructor in Ordnance & Gunnery, Naval Academy, '82–'84. Served in Lancaster, flagship, European station, '84–'85; Lancaster, flagship, South Atlantic station, '85–'87, during which cruise the Lancaster visited both the west and east coasts of Africa, Madagascar, and west coast of South America. War College, Newport, R. I., '87–'89. Secretary to Navy Yard Site Commission, Gulf of Mexico and South Atlantic Coast, '89; member of Board of Organization, '89–'90. Secretary to Commander-in-Chief, South Atlantic and South Pacific stations, Pensacola and Baltimore, '90–'91. Yorktown, '91–'93. Promoted to Lieutenant-Commander 1893. Torpedo station, '93–'95. Served in New York, flagship, North Atlantic station '95–'97.

LIEUT. COMMANDER DUNCAN KENNEDY, U. S. N.

Assistant Inspector 11th Light House district, 1st November, 1897 to 1st Feb. 1898, at which date relieved Captain Wm. M. Folger, as Inspector of the District, stationed at Detroit, Mich.

FIRST LOSS OF THE SEASON.

The schooner North West is the first serious casualty of the season. She was cut through by the ice and sunk near Waugoshance. The North West was insured for $22,000, with companies represented by C. A. MacDonald & Co., of Chicago. A dispatch from Mackinaw, says:

The schooner North West, bound from Chicago to Buffalo, with grain, in tow of the steamer Aurora, was sunk by ice near McGulpin Point, on Wednesday morning. She carried a cargo of 76,600 bushels of corn, shipped by Counselman & Co. The Aurora, with the barges Polynesia and North West in tow, left Chicago, Saturday, April 2. The Aurora and Polynesia passed Mackinaw City, bound down. The crew of the North West was rescued by the Aurora.

The North West registered 960 net tons and was built in 1873. She is owned by James Corrigan, of Cleveland. Both vessel and cargo were insured.

A number of other casualties have been met with, notably the large steel steamer Merida, bound down with corn, having her bows stove in; also the steamer Raleigh, Fayette Brown, damaged by ice.

NOTES.

"FRICTION and Lubrication" is the name of a small pamphlet recently issued by the Joseph Dixon Crucible Co., of Jersey City, N. J. It contains considerable interesting matter on the subject treated, and will be found a very valuable help to men who are trying to get a mile or two more to the pint of oil. It will be sent free on application.

AT A meeting of the Board of Directors of the Lake Michigan and Lake Superior Transportation Co., Jos. Austrian was elected president of the company in place of S. F. Leopold, deceased, and hereafter will in addition to his duties as general manager, also assume those of president. The following appointments of officers of the company become effective April 11, 1898: Mr. Frank Ferris, general freight agent; Mr. Edward J. Kelly, assistant gereral freight agent; Mr. Joseph Berolzheim, general passenger agent and auditor; Mr. Alfred F. Leopold, assistant general manager, with offices at Chicago.

"CASSIER'S Magazine of Illustrated Engineering" has in its April number the following articles: "The United States Ironclad Monitor," by F. M. Bennett, P. A. E., U. S. N. "The Liverpool Overhead Railway and Docks," by S. B. Cottrell, M. Inst. C. E. "Trade Unions and Political Economy," by Francis G. Burton. "Crushing and Pulverizing Machines," by James Douglass. "Inventing for a Living," by George Ethelbert Walsh. "Across the Chilkoot Pass by Wire Cable," by William Hewitt. "Suggestions for Improvement in Power Plants," by A. Bennett.

A LARGE and handsomely bound catalogue has just been issued by the Continental Iron Works, of Brooklyn. It is profusely illustrated with designs of the celebrated Morrison suspension furnaces for internal furnace boilers. It is the desire of the Continental Iron Works to promote the adoption of boilers of this type for stationary purposes, as they contain relatively greater volumes of water which act as reservoirs of heat, to be used as occasion demands, and aids in keeping the steam at constantly uniform pressures, which is a feature of vital importance. The several drawings show that the internal furnace boiler consists of a horizontal cylindrical shell, having an internal suspension or corrugated furnace, within the front portion of which the fire grate is located, the other portion, or end of the furnace, terminating in a back connection or combustion chamber, consisting of a "fire brick lined" metallic casing, forming in effect, an extension of the boiler shell. The products of combustion pass from this chamber, through the horizontal tubes, and are delivered into a sheet iron breeching attached to the front head of the boiler.

THE latest issue received of Fairplay, London, contains the following: "I have been requested to publish the following message from Buffalo and received in London: 'The American offices, representing eighteen American and foreign companies writing lake hulls, at a meeting held at Buffalo this day, unanimously passed the following resolution: 'That rates of premium obtaining on lake hulls last year were seriously inadequate to meet the losses and expenses under the conditions of settlement current in the business. Each office represented pledges itself not to write hull business this year except at a very material advance over last season's rates, and with provisions for direct representation of companies in the ascertainment and settlement of losses.' Mr. J. J. Clark was the chairman and Mr. A. H. McDonnell was the secretary.' It would be interesting to know whether the New York agent of the British and Foreign company wasone of the parties to the unanimous adoption of the above resolution."

IRON ORE SHIPPING DOCKS.

There are now on Lake Superior and Lake Michigan twenty-two ore loading docks. These twenty-two ore shipping docks have a total of 4,624 pockets, with an aggregate capacity of 633,804 gross tons, which have cost $6,849,529. These docks are located as follows: Two Harbors, five docks, 729 pockets of 109,150 gross tons capacity, cost of construction, $1,650,000; Duluth, two docks, 576 pockets of 72,160 tons capacity, $860,021; Superior, one dock, 250 pockets of 37,500 tons capacity, $413,619; Ashland, three docks, 782 pockets of 101,776 tons capacity, $942,576; Marquette, including St. Ignace and L'Anse, six docks, 1,083 pockets of 125,000 tons capacity, $1,733,304; Escanaba, four docks, 810 pockets of 100,000 tons capacity, $800,000; Gladstone, one dock, 120 pockets of 17,000 tons capacity, $128,009. Improvements and extensions carried out during the winter nearly double the capacity of some of the docks.

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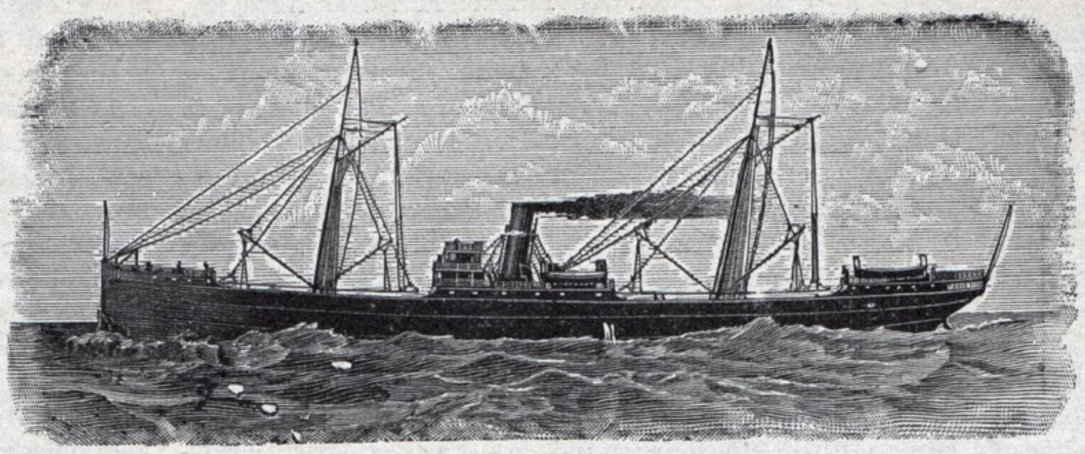

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TREASURY DECISIONS RELATING TO VESSELS AND NAVIGATIONAL INTERESTS.

PROMULGATION OF AMENDED LAW RELATING TO MATES OF STEAM VESSELS.

TREASURY DEPARTMENT,
STEAMBOAT INSPECTION SERVICE,
OFFICE OF SUPERVISING INSPECTOR-GENERAL,
WASHINGTON, D. C., March 26, 1898.

To snpervising and local inspectors of steam vessels and others whom it may concern:

Your attention is called to the act of Congress, approved March 23, 1898, amending section 4440, Revised Statutes of the United States so as to authorize the licensing second and third mates of ocean and coastwise steam vessels in charge of a watch, also authorizing the licensing of mates of river steamers.

Following is the text of the act referred to, the amendments to section 4440 therein being indicated by the words printed in italics:

AN ACT TO amend section forty-four hundred and forty of the Revised Statutes.

Sectiou 4440. Whenever any person applies for authority to be employed as chief mate of *ocean or coastwise* steam vessels, *or as second or third mate of ocean or coastwise steam vessels, who shall have charge of a watch, or whenever any person applies for authority to be employed as mate of river steamers*, the inspectors shall require satisfactory evidence of the knowledge, experience, and skill of the applicant in lading cargo and in handling and stowage of freight, *and if for license as chief mate on ocean or coastwise steamers, or as second or third mate of ocean or coastwise steamers, who shall have charge of a watch*, shall *also* examine him as to his knowledge and ability in navigation and managing such vessels and all other duties pertaining to his station, and if satisfied of his qualifications and good character they shall grant him a license authorizing him to perform such duties for the term of *five years upon the waters upon which he is found qualified to act;* but such license shall be suspended or revoked upon satisfactory proof of bad conduct, intemperate habits, unskillfulness, or want of knowledge of the duties of his station or the willful violation of any provision of this title.

Inspectors issuing licenses under the above law as amended will be careful in ascertaining that the applicants are practically as well as legally qualified to perform the duties of the office for which they are licensed, the examinations to be in writing and filed in the office of the inspector granting the license. Special licenses are being prepared for mates of river steamers, and will be furnished to inspectors as soon as received from the printer. In the meantime inspectors may issue to second and third mates of ocean and coastwise steamers, the chief mate's license now in use, erasing the word "chief" therein and interlining the words "second" or "third" therein, according to the grade of license issued.

The old form of license for mates of river steamers may be used for licensing such officers, erasing the word "one" therein preceding the word "year" and interlining the word "five" in the place of the word erased. Inspectors will substitute for such licenses the new forms of license for mates of river steamers, as soon after being supplied therewith as possible, canceling the old licenses, which must be returned to the Supervising Inspector-General, with letter of transmittal, indicating therein the serial number of the new license issued in its place.

JAS. A. DUMONT,
Supervising Inspector-General.

Approved:
O. L. SPAULDING, Assistant Secretary.

EXCURSION STEAMER.

Foreign excursion steamer not to transport passengers from place to place in the United States.

TREASURY DEPARTMENT, March 28, 1898.

SIR: This Department is in receipt of your letter, dated the 24th instant, inquiring whether a foreign excursion vessel may take on passengers at several American ports, transport them to Canadian ports, and return them to the American ports where they were taken on board.

The Department is of the opinion that such transportation would constitute a violation of the provisions of existing legislation governing the transportation of passengers between ports or places in the United States, and especially of section 2 of the act of February 17, 1898, amending section 8 of the act of June 19, 1886. * * *

Respectfully, yours,
O. L. SPAULDING, Assistant Secretary.
COLLECTOR OF CUSTOMS, Cape Vincent, N. Y.

RULES TO PREVENT COLLISIONS OF VESSELS.

Violation of navigation laws to be reported by boarding and revenue officers.

TREASURY DEPARTMENT, March 28, 1898.

SIR: Special agents Smith and Cummings, under date of January 25, 1898, report that articles 15 of the rules to prevent collisions of vessels are not enforced at your port. The marine division, it appears, states that it has no officer to enforce the regulations, and the surveyor is of the opinion that "it is not properly his duty to issue necessary instructions."

Article 15 of the international rules is in part as follows:

A steam vessel shall be provided with an *efficient whistle or siren, sounded by steam or by some substitute for steam*, so placed that the sound may not be intercepted by any obstruction, and with an efficient fog horn, to be sounded by mechanical means, and also with an efficient bell. (In all cases where the rules require a bell to be used a drum may be substituted on board Turkish vessels, *or a gong where such articles are used on board small sea-going vessels.*) *A sailing vessel of twenty tons gross tonnage or upward* shall be provided with a similar fog horn and bell.

Article 15 of the inland rules is in part as follows:

A steam vessel shall be provided with an *efficient whistle or siren, sounded by steam or by some substitute for steam*, so placed that the sound may not be intercepted by any obstruction, and with an efficient fog horn; also with an efficient bell. A sailing vessel of twenty tons gross tonnage or upward shall be provided with a similar fog horn and bell.

Both of these articles are based upon acts of Congress.

It is the duty of boarding officers, including officers of the Revenue Cutter Service, to ascertain, as far as may be practicable, whether the laws and regulations relating to vessels are properly observed, and to notify the proper superior officer of violations thereof coming to their notice. The Department desires that they take action accordingly in your district.

On receiving such notice, you may proceed as provided for by articles 973 and 976, Regulations of 1892.

Respectfully, yours,
O. L. SPAULDING, Assistant Secretary.
COLLECTOR OF CUSTOMS, New York, N. Y.

GROWTH OF THE PIG IRON INDUSTRY IN THE UNITED STATES.

Year.	Gross tons made.	Remarks concerning.
1810	53,008	
1830	165,000	Trebled in twenty years.
1840	286,903	Nearly doubled in ten years.
1850	563,755	Doubled in ten years.
1860	821,223	Increased nearly 50 per cent. in ten years.
1864	1,014,282	First year when an output of 1,000,009 tons is recorded.
1870	1,665,179	Doubled in ten years.
1872	2,548,713	First year when an output of 2,000,000 tons is recorded.
1880	3,835,281	Increased two and one-third times in ten years, also first record of 3,000,000 tons.
1881	4,144,254	First record of production of 4,000,000 tons.
1886	5,683,329	First record of production of 5,000,000 tons.
1887	6,417,148	First record of 6,000,000 tons.
1889	7,603,642	First record of 7,000,000 tons.
1890	9,203,703	Increased two and one-third times in ten years and first record of 9,000,000 tons.
1897	9,652,680	Maximum annual product.

Congratulations.—John Damm, a West Virginian, was married at a distance from home and received this telegram from the old folks: "Accept congratulations from the whole Damm family."—The Argonaut, San Francisco.

ASTRONOMICAL DATA.

Astronomical data for April 1898, furnished by the Washburn observatory:

Mercury will be in its most favorable position for visibility the early part of the month. It reaches greatest elongation east April 10, and will then set at 8:25 p. m., some distance north of the west point of the horizon. On April 17 Mercury may be seen about three degrees north of the bright evening star, Venus. Mercury will cease to be an evening star when it passes inferior conjunction, April 30. Venus is becoming higher as the evening star, and sets from 7:20 to 8.35 p. m. Its brilliancy is increasing slowly, owing to the fact that the planet's distance from us is diminishing. Mars rises a little south of east from 4:35 to 3:30 a. m. Jupiter is the brilliant star high in the east and reaches the meridian from 11:40 to 9:30 p. m. Saturn rises in the southeast from 11:20 to 9:20 p. m.

The times of sunrise and sunset for the month, at Milwaukee, are as follows:

	Sunrise.	Sunset.
April 1	5h. 33m.	6 h. 18 m.
April 11	5h. 16m.	6 h. 30 m.
April 21	5h. —m.	6 h. 41 m.
April 31	4h. 46m.	6 h. 52 m.

The times of the moon's phases are:

Full moon	April 6	3 h. 20 m. P. M.
Third quarter	April 13	8 h. 28 m. A. M.
New moon	April 20	4 h. 21 m. P. M.
First quarter	April 28	8 h. 5 m. P. M.

The principal fixed stars visible during the month in the evening hours are:

To the west: Capello, Aldebaran, the bright stars of Orion, Sirius, Procyon, Castor and Pollux. Near the meridian: Regulus. To the east: Arcturus and Spica.

THE American Machinist Publishing Co. are sending out to their friends a small box containing ten draftsmen's thumb tacks. When stuck over a drawing, these thumb tacks give it a very artistic appearance. People who have use for thumb tacks can obtain a box free by applying to the American Machinist, 256 Broadway, New York.

VISIBLE SUPPLY OF GRAIN

As compiled for The Marine Record, by George F. Stone, Secretary Chicago Board of Trade.

CITIES WHERE STORED.	WHEAT. Bushels.	CORN. Bushels.	OATS. Bushels.	RYE. Bushels.	BARLEY. Bushels.
Buffalo	678,000	370,000	82,000	48,000	108,000
Chicago	6,434,000	16,661,000	1,193,000	712,000	323,000
Detroit	80,000	70,000	13,000	19,000	.....
Duluth and Superior	3,510,000	3,223,000	3,130,000	1,388,000	404,000
Milwaukee	109,000	104,000	89,000	81,000	2,000
Montreal	94,000	58,000	1,054,000	44,000	40,000
Oswego	.....	.....	.....	.....	.....
Toledo	243 000	1,166,000	281,000	13,000	.....
Toronto	24,000	.....	21,000	.....	13,000
On Canal	.....	.....	46,000	.....	.....
Grand Total	30,223,000	42,647,000	12,047,000	3,203,000	1,173,000
Corresponding Date, 1897	38,612,000	25,318,000	13,616,000	3,652,000	2,812,000
Decrease	.....	735,000	.....	62,000	344,000

While the stock of grain at lake ports only is here given, the total shows the figures for the entire country except the Pacific Slope.

APRIL OHIO WEATHER.

The following data, covering a period of twenty-seven years, have been compiled from the Weather Bureau records at Cleveland, Ohio:

TEMPERATURE.

Mean or normal temperature, 46 degrees.

The warmest month was that of 1896, with an average of 53 degrees.

The coldest month was that of 1874, with an average of 40 degrees.

The highest temperature was 85 degrees on April 30, 1872, and April 18, 1896.

The lowest temperature was 15 degrees on April 17, 1875.

Average date on which first "kiling" frost occurred in autumn, October 11.

Average date on which last "killing" frost occurred in spring, May 1.

PRECIPITATION (rain and melted snow).

Average for the month, 2.26 inches.

Average number of days with .01 of an inch or more, 12.

The greatest monthly precipitation was 5.38 inches in 1873.

The least monthly precipitation was 1.38 inches in 1895.

The greatest amount of precipitation recorded in any 24 consecutive hours was 1.65 inches on April 30, 1896.

The greatest amount of snowfall recorded in any 24 consecutive hours (record extending to winter of 1884–85 only) was 4 inches on April 18, 1887.

CLOUDS AND WEATHER.

Average number of clear days, 8; partly cloudy days, 12; cloudy days, 10.

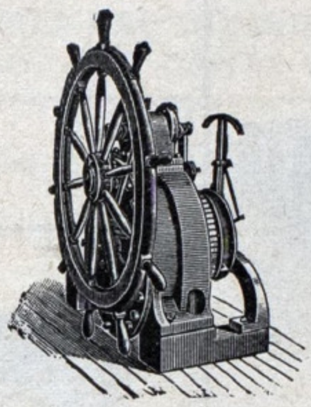
WIND.

The prevailing winds have been from the northeast.

The highest velocity of the wind was 56 miles from the west on April 2, 1896.

MESSRS. HARPER BROS., have just published a handsome volume, entitled "Spun-Yarn," by Morgan Robertson. It contains five stories of sea adventures, which we recommend to all who take an interest in sea life, particularly young folks. The language used is very good, a great deal better than in most works of the day and the description of the adventures is striking and graphic. The stories will be particularly welcome at a time when the war spirit is aroused and will make pleasant reading to many in their hours of recreation.—The Helman-Taylor Co., successors to The Taylor-Austin Co., Cleveland.

Queen City Hydraulic Steerer.



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T. HOUARD WRIGHT, Marine Secretary.

Lake Marine Department, GEORGE L. McCURDY. MANAGER. CHICAGO, ILL.

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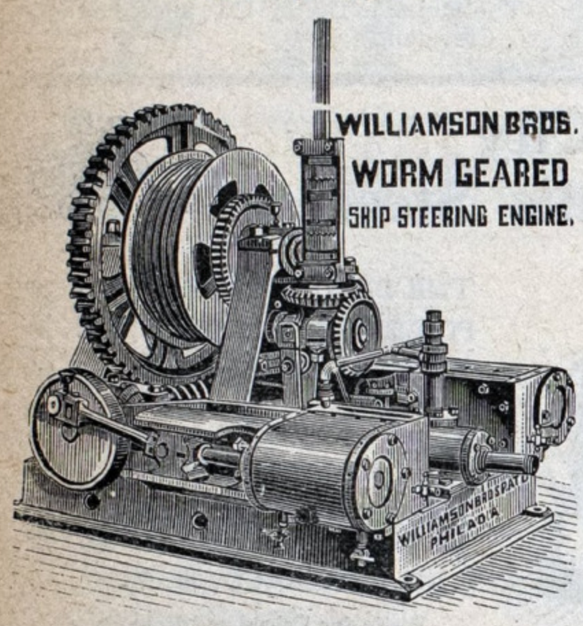

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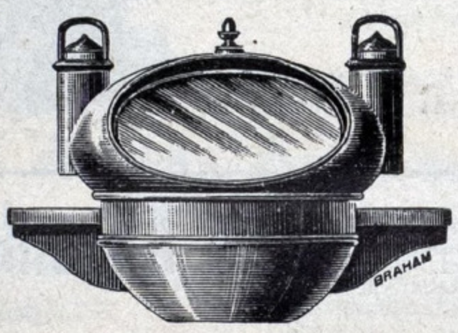

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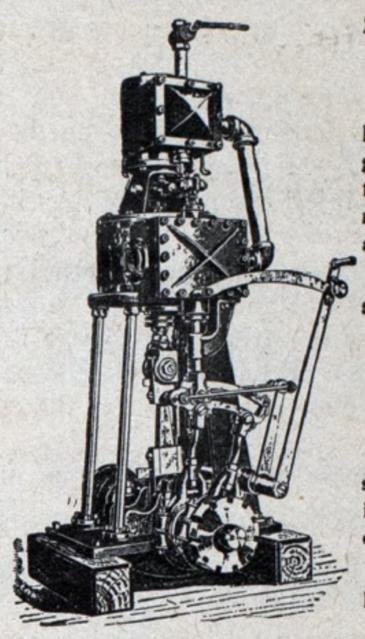

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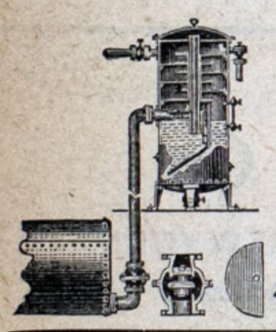

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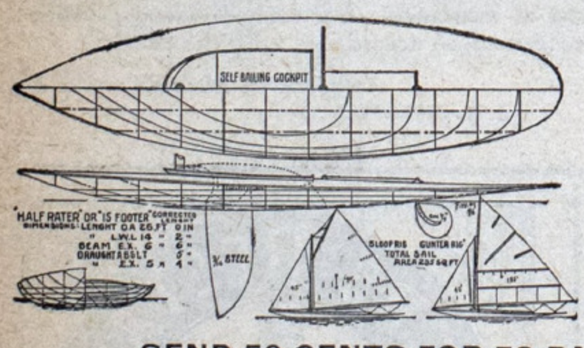

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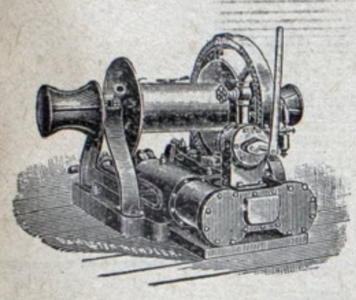

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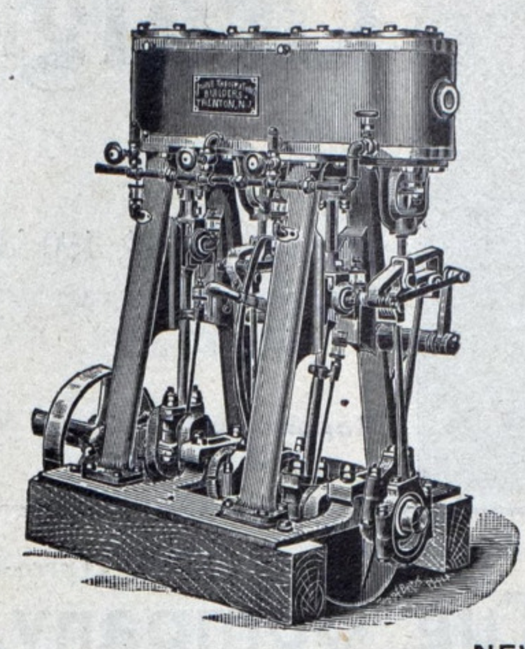

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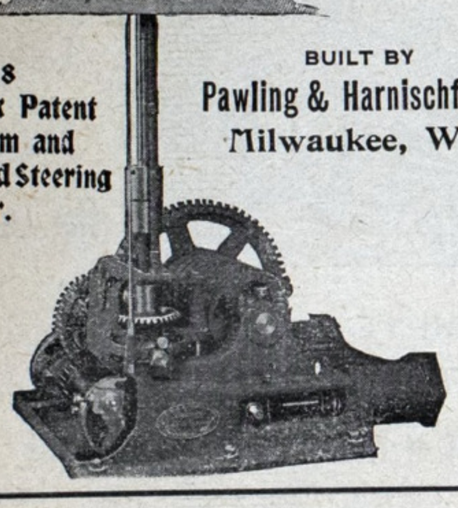

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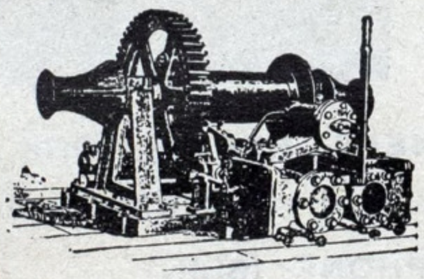

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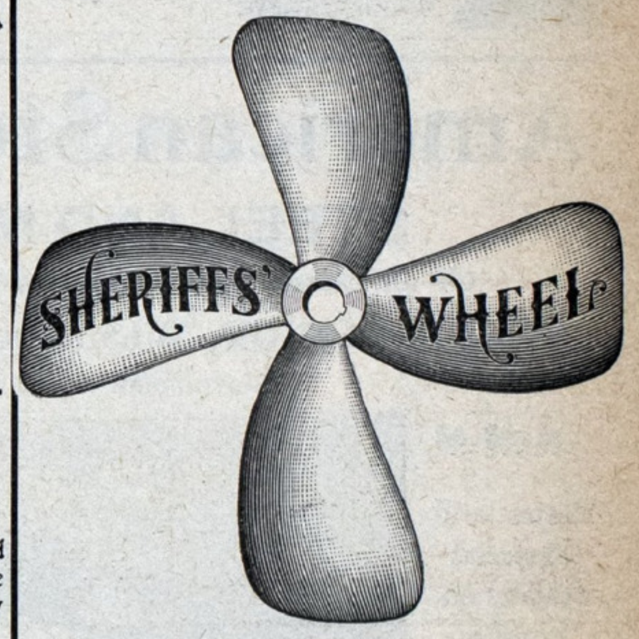

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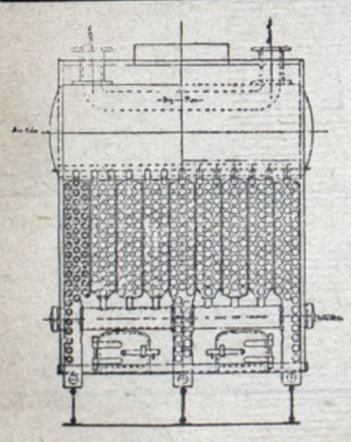

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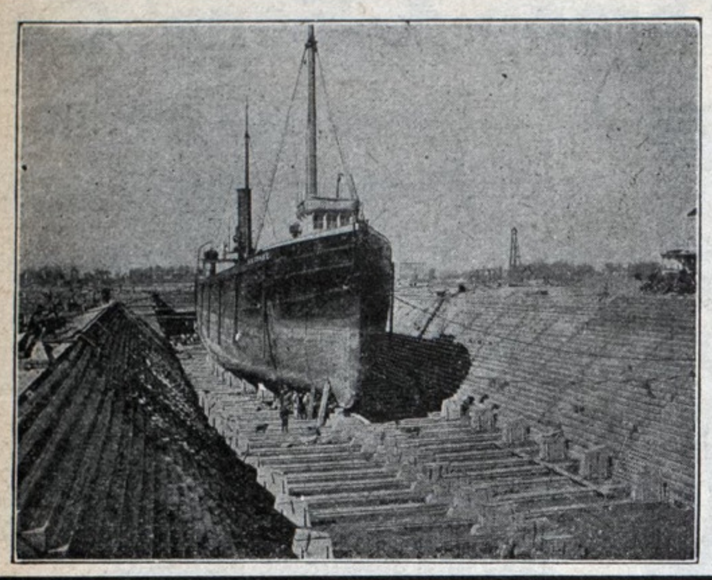

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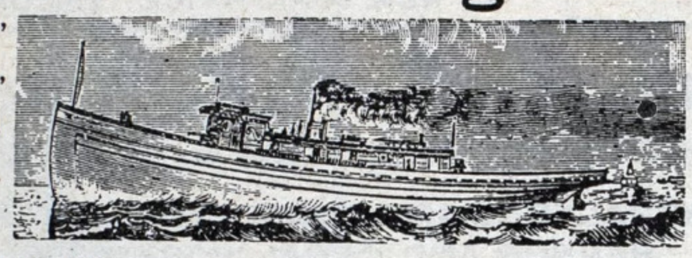

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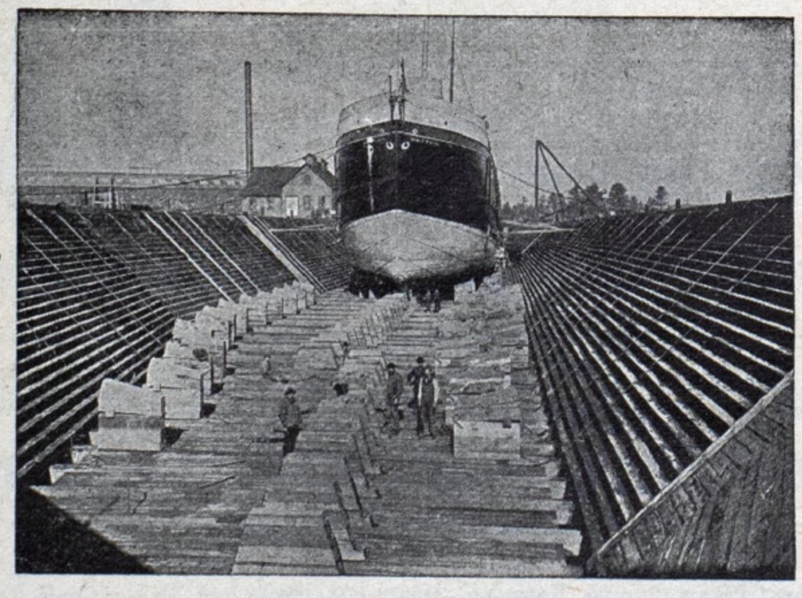

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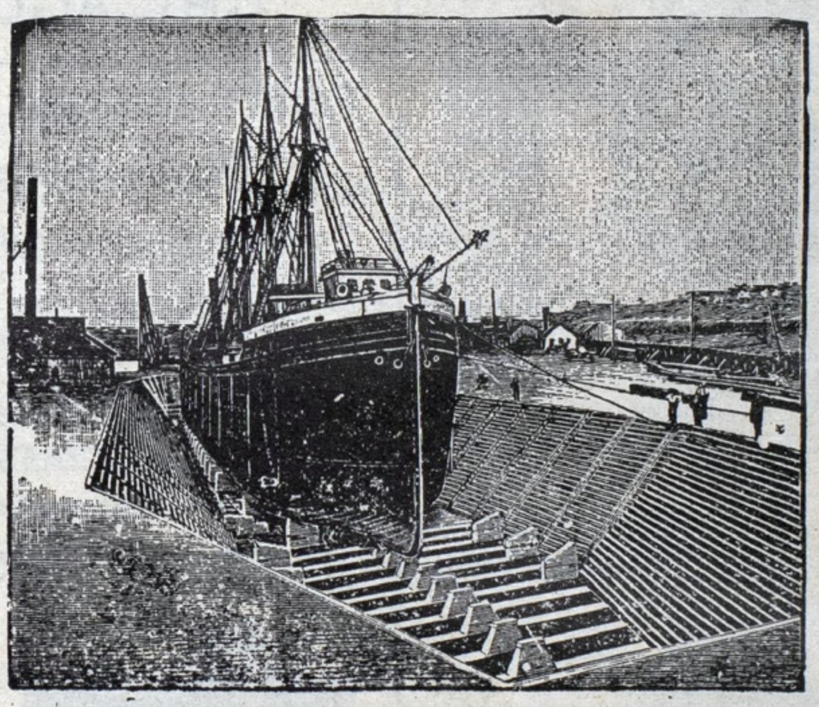

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